A

MANUAL OF GARDENING

FOR

WESTERN INDIA.

SECOND EDITION.—REVISED.

12

BY R. RIDDELL, ESQ.

BOMBAY:

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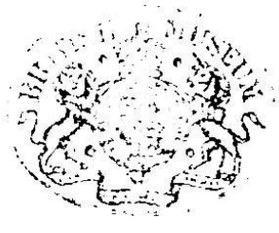


THE FOLLOWING

REVISED EDITION

OF

A

MANUAL OF GARDENING

FOLLOWED

IN THE DECCAN FOR SEVERAL YEARS,

IS

DEDICATED TO THE

PRESIDENT AND MEMBERS

OF THE

AGRICULTURAL AND HORTICULTURAL SOCIETY OF WESTERN INDIA,

BY

R. RIDDELL.

INTRODUCTION.

In offering this revised Edition of my Indian Gardener's Manual to the public, I think it necessary to mention, that since its first appearance in 1840, it has received many additions and corrections, which will, I trust, render it more worthy of patronage. The numerous typographical errors in the edition published at Madras in 1845, although they did not materially affect its utility, rendered it so unsightly, and gave it the appearance of being got up in so careless a manner, that I determined (if possible) to prepare a new Edition in a more correct and presentable form: much time has elapsed in bringing it out, but the delay has not been occasioned by any neglect of mine. I mention this circumstance in extenuation of the non-performance of a promise given to the subscribers, that a corrected edition should speedily make its appearance and be exchanged if desired.

It having been pointed out to me that a few wood-cuts might be introduced with advantage, but not being prepared for this, (the manuscript being then finished), I selected a few from Loudon's Encyclopædia of Gardening, which will enable any one so disposed to make a reference to that work. Gardening in this country is however so different from anything carried on in an European climate, that the method there laid down for the culture of Fruit, Vegetables, and Flowers, would, in many cases, be inapplicable here, as well as the English or European mode of grafting; rendering a practical treatise of Gardening, founded on experience in this country, a desideratum: such I trust this little work (with all the errors into which I have doubtlessly fallen) may prove. I have the gratification of knowing from many who have followed my system, that the results of their operations have been successful when other plans have failed. And I trust the present work will prove as acceptable to the Patrons* to whom it is dedicated as did the first edition, of which they were pleased to express their approbation when recommending the publication of a second.

R. RIDDELL.

Bolarum, *20th May*, 1845.

* Dedicated to the President and Members of the Agri-Horticultural Society, Bombay.

USEFUL MECHANICAL AGENTS REQUIRED FOR GARDENING.

ERRATA ET CORRIGENDA.

Page.	Line.	For	Read.
5	2	Insert the word "and" between egg and is.	
10	16	Vini nali,... ...	... Viminali.
12	14	Brown,... ...	... Crown.
16	35	2½,... ...	... 52½.
23	2	Omit the words "a" and "thing."	
24	30	Of beads,... ...	... Or beds.
25	42	Sap-root,... ...	... Tap-root.
26	39	Lop off,... ...	... Top of.
28	2	DeCandole,... ...	... Decandolle.
...	9	Pubesceus,... ...	... Pubescens.
...	22	Pantaphylla,... ...	... Pentaphylla.
29	10	Nastertium,... ...	... Nasturtium.
...	29	Siliqui,... ...	... Siliqua.
30	1	Sambar,... ...	... Sambac.
...	23	Officinales,... ...	... Officinalis.
...	45	Thumbergia,... ...	... Thunbergia.
31	1		
32	29	Banducha,... ...	... Banducca.
...	36	Mussanda,... ...	... Musscenda.
34	31	Tarnata,... ...	... Ternatea.
38	5 & 7	Thumbergia,... ...	... Thunbergia.
...	10	Balsaminœ,... ...	... Balsamina.
...	25	Colour, ...	... Clover.
39	44	He,... ...	... The.
46	8 & 13	Jasmine,... ...	... Jasminum.
...	27	Delphinum,... ...	... Delphinium.
50	7 & 18	Russalis,... ...	... Russelia.
52	29	Tabranamontana,... ...	... Tabernamontana.
53	12	Aeridus,... ...	... Aerides.
...	20	Decapitalum,... ...	... Decapetalum.
...	41	Formusa,... ...	... Formosa.
...	42	Carembola,... ...	... Carambola.
54	17	Stan,... ...	... Stans.
...	43	Nepaulentia,... ...	... Nepalense.
...	46	Helicacubrum,... ...	... Halicacabum.
...	58	Equisitifolia,... ..	... Equisetifolia.
55	2	Swietania,... ...	... Swietenia.
...	5	Cicæa,... ...	... Cicca.
...	13	Decumaria,... ...	... Decumana.
...	14	Ternata,... ...	... Ternatea.
56	4 & 5	Emelina,... ...	... Gmelina.
...	30	Vaupellii,... ...	... Acuminatum.
58	10	Oriodendron,... ...	... Eriodendron.
...	38	Pulcherrium,... ...	... Pulcherrima.
59	54	Jasmonoides,... ...	... Jasminoides.
...	56	Anguinea,... ...	... Anguina.
61	7	Anonæ,... ...	... Annona.
62	13	Vaupellii,... ...	... Acuminatum.
...	22	Corn,... ...	... Cone.

Page.	Line.	For	Read
62	32	Oriodendron,... ...	... Eriodendron.
63	4	Racimes,... ...	... Racemes.
64	38	Decumaria,... ...	... Decumana.
65	32	Halicacubrum,... ...	... Halicacabum.
66	9 & 12	Swietania,... ...	... Swietenia.
68	5	Arbrus,... ...	... Abrus.
...	11	Ternata, ..	... Ternatea.
...	...	Clitoris,... ...	... Clitoria.
69	23	Purpuera,... ...	... Purpurea.
...	37	Launceolata,... ...	... Lanceolata.
...	42	Tamarindicus,... ..	... Tamarindus.
71	12	Decapitalum,... ...	... Decapetalum.
72	30	Chrysophilum,... ...	... Chrysophyllum.
73	38	Plumiera Accuminata,.....	... Plumieria Acuminata.
...	37	Accuminata,... ...	.. Acuminata.
74	14	Sacostemma,... ...	... Sarcostemma.
75	1	Bona-Nox,... ...	... (Dele.)
...	16	Viliform,... ...	... Filiform.
...	35	Nepaulentia,... ...	... Nepalense.
76	7	Stachytapheta,... ...	... Stachytarpheta.
...	15	Emelina,... ...	... Gmelina.
...	23	Scandentamous,... ...	... Scandent, Ramous.
...	28	Linnear,... ...	... Linear.
77	3 & 5	Sextile,... ...	... Sessile.
...	34	Of,...	... (Dele.)
78	9	Kuramar,... ...	... Keeramar.
...	25	Terucalli,... ...	... Tirucalli.
...	30	Cicæa,... ...	... Cicca.
...	31	Pennate,... ...	... Pinnate.
...	42	Embilica,... ...	... Emblica or Emlica.
79	5	Nutricious,... ...	... Nutritious.
...	12	Sibiperum,... ...	... Sebiferum.
...	23	Purple,... ...	... Peepul.
...	29	Maclura,... ...	... Macluria.
...	31	Vide Fig,... ...	... Vide Mulberry.
...	38	Equisitifolia,... ...	... Equisetifolia.
...	44	Linnear,... ...	... Linear.
80	11	Aeridas,... ...	... Aerides.
...	21	Albus,... ...	... Album.
81	25	Carambola,... ...	... Bilimbi.
...	29	Occidentalee,... ...	... Occidentale.
...	32	Ricinis,... ...	... Ricinus.
...	33	Nutar,... ...	... Cardamomum.
...	35	Bauhinea,... ...	... Bauhinia.
...	39	Clitoris,... ...	... Clitoria.
...	45	Cocos Mucifera,... ...	... Cocos Nucifera.
...	46	Coffia,... ...	... Coffea.
82	28	Insert Averhoa Carambola.	...
...	3	Supressus,... ...	... Cypressus.
...	14	Casuarena,... ...	... Casuarina.
...	20	Spondius,... ...	... Spondias.
...	24	Jambolania,... ...	... Jambolana.
...	46	Purpuera,... ...	... Purpurea.
83	3	Opuntea,... ...	... Opuntia.
...	4	Orantium,... ...	... Aurantium.
...	6	Flabiliformis,... ...	... Flabelliformis.
...	39	Sibiferum,... ...	... Sebiferum.
85	33	After the word Curcuma insert ANGUSTIFOLIA.	
86	30	Purpuera,... ...	... Purpurea.

Page.	Line.	For	Read
86	32	Arecha,... ...	... Areca.
87	17	Averrhoa,... ...	... Averhoa.
...	26	Carambola,... ...	... (Dele.)
68	1	Occidentalee,... ...	... Occidentale.
90	3	Ternata,... ...	... Ternatea.
...	11	Nuciffra,... ...	... Nucifera.
...	19	Coffia,... ...	... Coffea.
91	12	Supressus,... ...	... Cypressus.
94	43	Jambolania,... ...	... Jambolana.
95	16	See Bilimbi,... ...	... Averrhoa Carambola.
...	17	Carandos,... ...	... Carandas.
98	16	Purpuera,... ...	... Purpurea.
99	11	Mooringa Hyperanther,...	... Hyperanthera ... Morunga.
101	...	Flabilliformis,... ...	... Flabelliformis.
104	15	Accumana,... ...	... Decumana.
105	13	Sagus Spinosus,... ...	... Saguerus Rumphii.
...	25	Malabaricum,... ...	... Ceiba.
...	28	Omit the words "are white." ...	
107	45	Tamarindum,... ...	... Tamarindus.
...	48	Sibiforum,... ...	... Sebiferum.
108	10	Punctada,... ...	... Punctata.
109	23	Argostris Linninus,... ...	... Agrostis Linearis.
121	20	Gagged,... ...	... Jagged.
126	29	Sage,... ...	... Sag.
...	38	Seeds	... Seed.
127	1	Grows,... ...	... Goes.
...	16	Insert the word "the" between all and thin.	
128	43	Portulica,... ...	... Portulacca.
...	...	Setiva,... ...	... Sativa.
...	...	Oleracia,... ...	... Oleracea.
129	42	Squast,... ...	... Squash.
156	12	Arbrus,... ...	... Abrus.
...	...	Pracatorius,... ...	... Precatorius.
...	24	Decapitalum,... ...	... Decapetalum.
...	23	Artemesia,... ...	... Artemisia.
...	35	Carembola,... ...	... Carambola.
...	44	Aurundinacea,... ...	... Arundinacea.
...	45	Melocanna,... ...	... Moluccana.
157	11	Purpuera,... ...	... Purpurea.
...	30	Kocœnigii,... ...	... Kœnigii.
...	35	Stan,.. ...	... Stans.
...	33	Nepaulentia,... ...	... Nepalense.
...	35	Helicacubrum,... ...	... Halicacabum.
...	36	Carega,... ...	... Careya.
...	37	Spharica,... ...	... Spherica.
...	38	Carandos,... ...	... Carandas.
...	40	Caryophylus.... ...	... Caryophyllus.
...	47	Equisitifolia,... ...	... Equisetifolia.
158	1	Sibiqui... ...	... Siliqua.
...	12	Cloroxilon,... ...	... Chloroxylon.
...	...	Swietania,... ...	... Swietenia.
...	14	Chrysophilium,... ...	... Chrysophyllum.
...	...	Sibiferium,... ...	... Sebiferum.
...	22	Ciceæ,.. ...	... Cicca.
...	31	Decumaria,... ...	... Decumana.
...	42	Delphineum,... ...	... Delphinium.
...	43	Clitoris,... ...	... Clitoria.
159	11	Accuminata,... ...	... Acuminata.

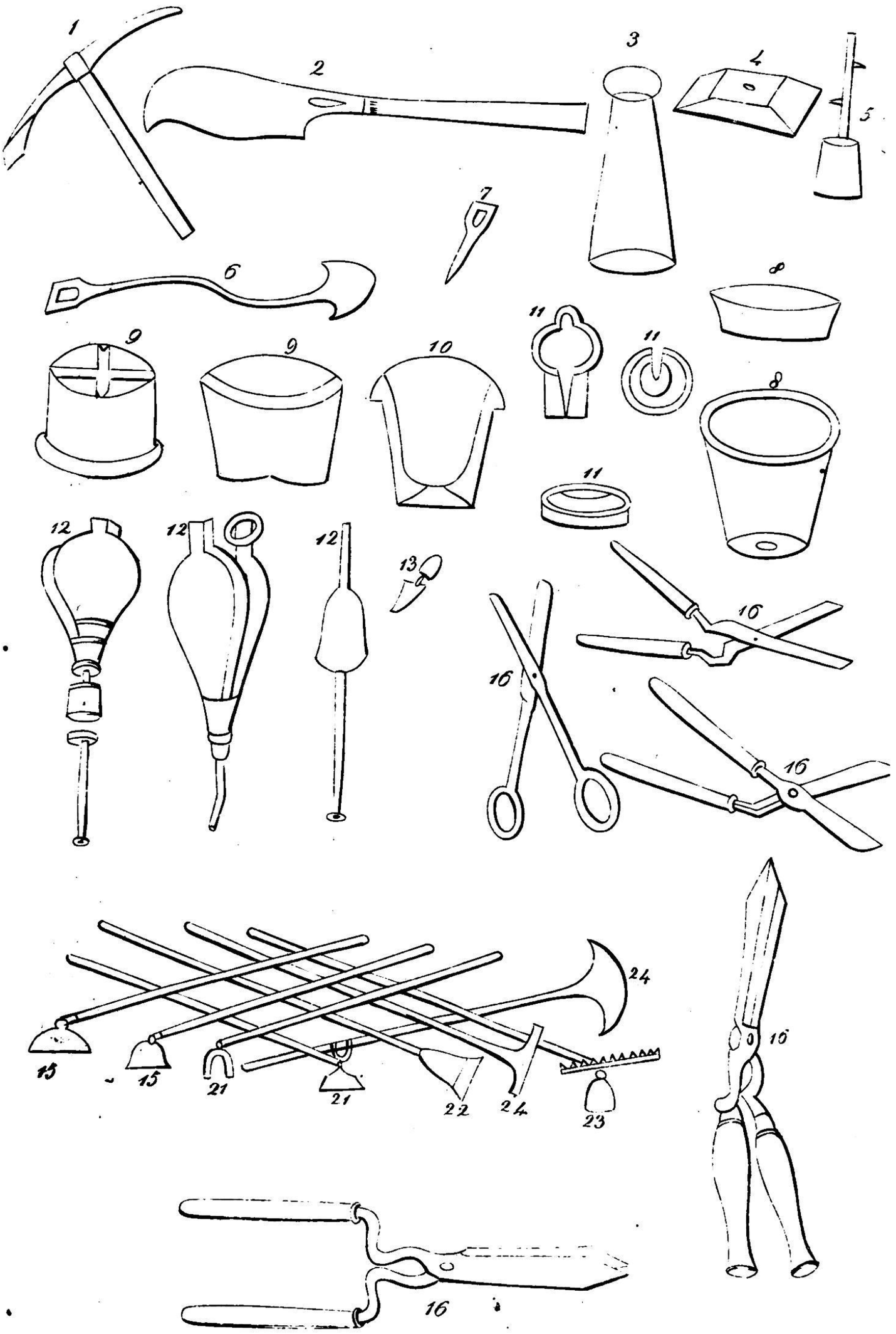
Page.	Line.	For		Read
159	14	Gaintrus,...	...	... Ganitrus.
...	...	Garcinea...	...	... Garcinia.
...	21	Emelina,...	...	... Gmelina.
...	2	Flaxinella,...	...	... Fraxinella.
...	36	Vaupellii,	...	... Acuminatum.
160	18	Sicus,...	...	... Sicous.
...	4	Verginiana,...	...	... Virginiana.
...	48	Banducha,...	...	... Banducca.
161	32	Melaluca,...	...	... Melaleuca.
...	...	Leucadendron,...	...	... Leucodendron.
...	36	Memeclyon,...	...	... Memecylon.
...	12	Mussanda....	...	... Mussænda.
...	32	Nyclanthes,...	...	... Nyctanthes.
...	45	Opuntea,...	...	... Opuntia.
...	50	Oriodendron,...	...	... Eriodendron.
162	32	Corynarius,...	...	... Coronarius.
...	33	Embilica,...	...	... Emblica.
...	56	Plumieræ Accuminata,...	...	... Plumieria ... Acuminata.
...	23	Psideum,...	...	... Psidium.
...	52	Chocliaria,.....	...	... Cochlearia.
163	2	Russalis,...	...	... Russelia.
...	11	Stachytapheta,...	...	... Stachytarpheta.
...	44	Swietania,...	...	... Swietenia.
...	54	Tamarindicus,...	...	... Tamarindus.
164	1	Jasmonoides,	...	... Jasminoides.
...	7	Terminatia,...	...	... Terminalia.
...	21	Anguinia,...	...	... Anguina.
...	13	Volkamaria,...	...	... Volkameria.

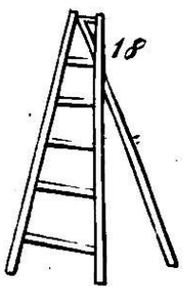
☞ THE Printer begs to apologize for the number of errors which appear in the following pages as indicated above,—which have crept into the work owing to its having, to save time, been sent through the Press without the Author's revision.

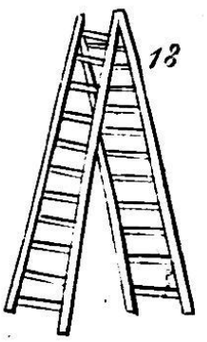
ADDENDA.

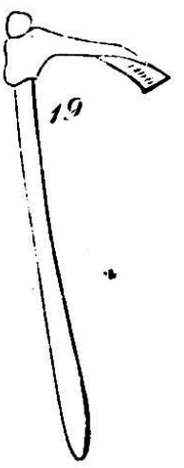
Page 72.—CHONEMORPHA MACROPHYLLA.—A very handsome climbing shrub, with large white flowers; well adapted for a screen or covering a wall.

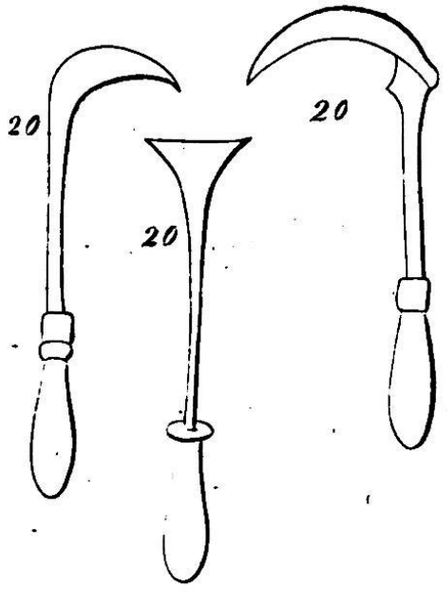
Page 129.—SORREL.—This is grown by sowing the seed broad-cast, and thinning the plants to the distance of eight or ten inches from one another. It may be sown at the commencement of the rains.

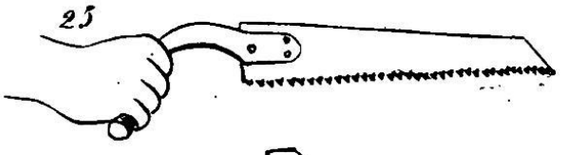


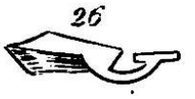


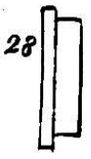


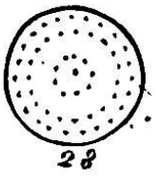


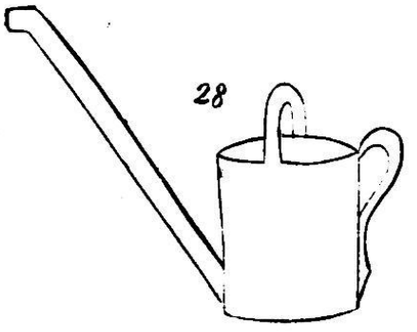


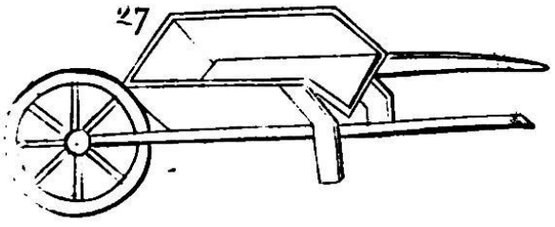


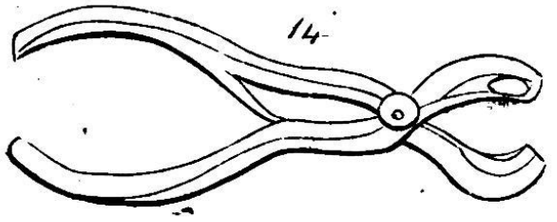


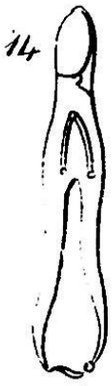


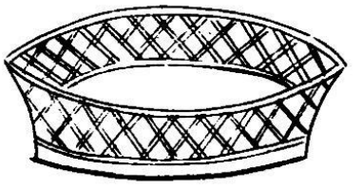


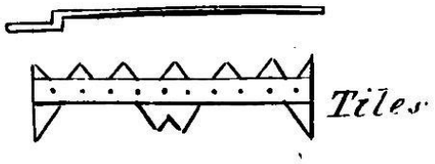












Artificial Borders

DESCRIPTION OF TOOLS, AND THEIR USES.

AXE OR PICK (*vide Fig.* 1.)—Is used for loosening hard ground gravel, and also for cutting roots in felling timber. The metal part should be of the best iron pointed with steel, one end wedge-shaped and sharp, the other round and pointed: the handle ought to be formed of strong sound wood.

BILL HOOK OR PRUNING BILL (*vide Fig.* 2.)—These instruments are of a variety of shapes, and used by Natives,—the blades generally curved and differing in length: some are sharp on one side only, others on both. The handles also vary in length according to the purpose for which they are intended, so as to allow the operator's arm and wrist a free action.

BLEACHING POTS (*vide Fig.* 3.)—Are merely earthenware cones, of about six inches in diameter at bottom and four at top—length from 9 to 18 inches. They are used for covering celery and salad.

BEETLE OR RAMMER (*vide Figs.* 4 & 5.)—Is a large heavy piece of wood of any shape, with a flat surface, and bamboo or other handle attached, for the purpose of flattening walks, &c.

BROOM.—This is a bundle of twigs, used by the hand for sweeping with.

BUDDING KNIFE.—Differs from the grafting knife in having the point of the sharp edge of the blade rounded off in the same manner as is the back on the blunt edge of the grafting and pruning knives: it has also a thin wedge-shaped ivory or bone handle, for raising up the bark; but according to the Native plan of budding, any knife will answer.

DIGGING HOE (*vide Fig.* 6.)—This is a powerful instrument, with a handle like a spade, and is well adapted for stirring the ground among flowers or plants.

DIBBLE (*vide Fig.* 7.)—Is simply a short piece of cylindrical wood, from a foot to eighteen inches long, obtusely pointed, and may have a spade-like handle at the other end.

FLOWER POTS (*vide Fig.* 8.)—Are of many varieties in shape and figure. The common pot should be a cylindrical tapering vessel, made of burnt clay, with a perforated bottom: in size they should vary from a pint to many gallons, so as to suit the most minute plant to a full grown shrub. It should be of a conical shape, to admit freely the removal of the plant with a due proportion of earth, so that the suckers of the roots may not be injured. An annular flower-pot saucer, intended to defend plants placed in the centre, from ants, &c., may be made, and the annular channel filled with water.

FRENCH FLOWER POTS (*vide Figs.* 9 & 10.)—Instead of one hole in the centre of the bottom to admit water and drainage, they have also others. The under sides of the bottoms are concave, by which means the water is never retained be-

tween the pot and the surface on which it stands. A grooved bottom pot is also used for the same purpose.

FRUIT PRESERVERS—are made either of basketwork or earthenware: if of the former, they should be of an orbicular shape, made with split bamboo or wicker work, size a little larger than the full grown fruit, to be tied over it as a protection from birds: they are also made of baked clay, and sold in most bazars.

FUMIGATING BELLOWS (*vide Fig.* 12)—Differ from the common domestic bellows in having a receptacle for leaves of tobacco, which being ignited, and the blast sent through it, a powerful issue of smoke is produced by the rose, which can be directed against insects on any particular plants. A detached fumigator may also be added to a common pair of bellows, and may easily be constructed by any brass-smith.

GARDEN TROWEL (*vide Fig.* 13.)—A small instrument, very much like those used by masons, the blade being a little circular.

GARDEN WATER-ENGINE.—For showering water upon beds or parterres: moveable upon wheels, and of a capacity sufficient to contain several gallons of water.

GRAFTING KNIFE.—Differs from the common pruning knife in having a thinner and more narrow blade, fixed in a bone or horn handle.

GATHERING SCISSORS (*vide Fig.* 14.)—Are used for cutting off a flower or bunch of grapes, holding either after separation.

HOES (*vide Fig.* 15.)—Are useful for loosening weeds, stirring the soil around the plant, closing up the soil about their stems, and for making drills to sow seeds; and lastly, for spudding up weeds in walks, &c.

HEDGE SHEARS (*vide Fig.* 16.)—Are composed of two blades acting in unison by means of a pivot on which they turn: they are chiefly used for trimming hedges, but where the twigs or shoots are strong, the hedge bill or pruning shears are preferable.

LADDERS (*vide Fig.* 18.)—These are of several descriptions; the principal ones for use in a garden are the three, styled, forked, and double ladders, both for pruning and gathering fruit.

LONG PRUNING SHEARS (*vide Fig.* 17.)—This is a compound blade attached to a handle from five to eight feet in length, and operating by means of a lever moved by a cord and pully: its use is to enable a person standing on the ground to prune standard trees, which it readily does from its length of handle.

MALLET.—A beater or mallet of wood, used for pulverising clods of earth or other substances.

MATTOCK OR HOE AXE (*vide Fig.* 19.)—This instrument is used for breaking up the earth, and for grubbing up the roots of small trees or bushes

NATIVE HOES NURANEE AND KOORPAH, (*vide Fig.* 20.)—These two instruments for weeding are quite suited for natives, who squat down to their work almost on every occasion.

PINS AND LINE.—The garden line is composed of three parts—the frame, generally of iron, the cord, which is wound upon the frame, and the pin, which

terminates the cord. The common use is perfectly understood from the name. It may also be applied, by means of pegs or small stakes, to form curved lines.

PLOUGH.—The common native plough, a most cumbersome-looking instrument, is the only one I believe used for gardens, and the only one likely to be for some time.

POWRAH (*vide Fig.* 22.)—This is the common native digging hoe, being a thin broad wedge of iron, having either a wooden handle attached, or else made of iron throughout.

PROPAGATION POTS (*vide Fig.* 11.)—Has a slit in the side, from the rear to the hole in the bottom, the use of which is to admit the shoot of a tree for propagation, by ringing in the Chinese manner. Opposite to the slit is an ear or round appendage, with a hole for hanging the pot to a branch. To those who practice this mode of rooting shoots, without laying them down to the ground, such pots will prove very convenient. They may be made of tin for the same purpose.

PRONGED HOE (*vide Fig.* 21.)—This hoe is only used for weeding.

PRUNING HOOK.—A small sharp-edged Pruning Hook, made to attach to a bamboo or stick shaped with a curve like a boat-hook, for cutting fruit, flowers, or branches.

RAKE (*vide Fig.* 23.)—The garden rake consists of a range of teeth inserted in a straight bar of iron or wood from six to eighteen inches in length, and attached at right angles across the end of a handle: they are used for covering seeds, smoothing surfaces, or raking off weeds, &c.

RINGING KNIFE.—This is a double-bladed knife, exactly resembling a double-bladed penknife: when open, the latter article will answer every purpose.

SHADE-BASKETS OR POTS—are baskets or pots of a conical shape or form, for protecting from the sun young plants when first put out: they should be removed towards the evening, and replaced in the morning, for three or four days. Two half tiles answer the same purpose.

SAWS (*vide Fig.* 25.)—Essentially necessary: they should be of various sizes.

SPADE.—This article is of very little use except for Europeans, as it cannot be properly worked without the person wearing shoes.

SPUD (*vide Fig.* 24.)—A straight hoe for weeding.

TRANSPLANTER (*vide Fig.* 26.)—Formed of two semi-circular pieces of iron, with a cross handle. It is thrust into the ground on each side of the plant, and the earth is by that means drawn up with the root.

WHEEL BARROW (*vide Fig.* 27.)—This is a useful and economical article, and no garden should be without one.

WATERING POTS (*vide Fig.* 28.)—Are of all sizes: they may be made of copper, tin, or even earthenware; if of tin, have wire inserted into the edges, rims, and handle; the rose may be flat or round, but should always fit on tight to the spout.

ALBUMEN—is a thick, glary, tasteless, fluid, resembling the white of an unboiled egg; is a substance proved to exist in vegetables, and abounds in the papaw (Carrica papaya) tree; it also exists in mushrooms and some other of the fungi.

BLANCHING OR ETIOLATION.—The process of whitening plants, by which you deprive them of much of their bitter quality. It is performed in several ways —by either earthing them up so as to exclude the light and air, or by covering them over with boards, which is a bad plan in this country; or else by placing over the plant earthenware pots, open above and below, and filling up the space at the bottom with dry sand—but I by no means recommend doing the latter, as it gets between the leaves, and is difficult sometimes to remove. A couple of half circular tiles, placed round the plant, with the earth brought up around it, is the method I generally pursue. Sallading only requires the leaves should be brought together and tied with plantain leaf or other substance.

BLIGHT.—A common term for injuries received by the vegetable kingdom when in a state of growth, which cannot be referred to any obvious or certain cause, and coming suddenly, is said to give them the appearance of being blighted. Fogs, clammy weather, and frost, are said to be some of the causes.

BUDDING—should be performed in the morning or evening: the natives give the preference to the last and first quarter of the moon for the operation. The cuttings from which buds are taken should be from healthy trees, and such as have borne fruit. The best season for budding is at the commencement of the rains, and during the cold weather, though much will depend upon the state of the tree from which you take your bud, and the forwardness of the stock on which it is to be inoculated,—whether the sap is rising in it, and the bark separates with ease from the wood when opened.

Process.—Provide yourself with a good sharp knife, and shreds of linen tape, or plantain leaf, about one fourth of an inch in breadth; also have a thin blunt piece of flat ivory or bamboo, cut round or smooth at the end, for introducing between the bark and separating it from the wood. Having your knife, shreds, and cuttings, ready, you are to proceed in the following manner: with your knife make a cross cut in the smooth part of the bark, or rind of the stalk, and be careful to make it no deeper than the bark; let another be made down the centre about two inches long, so that the two cuts form the figure of the cross, in which the bud is to be inserted. Then from your cuttings or shoots take off the bud in the following manner: begin at the lower end of the shoot, having removed all the leaves, but leaving a small part of the stalk remaining; then about an inch below the lower bud, or eye, make a cross cut in the shoot, half way through, in a slanting direction, carrying the cut upwards in a clean manner to about half an inch below the bud; here separate it from the stalk with a cross cut; then with the point of your knife clear away the wood inside from the rind, very gently, and observe if the inside of

the eye of the bud be left; for if there appears a small hole, the eye is gone, and the bud for insertion useless, therefore take another, and when ready, insert it immediately in the stock prepared for its reception. Be careful to place the bud in the centre of the perpendicular slit from the cross above, observing that the bud is in no ways injured or pressed upon by the sides or the bark of the stock; then let that part be immediately bound round with the tape, or shreds, beginning a little below the cut and proceeding upwards, drawing it closely round to the top of the slit, but carefully observing that the eye of the bud is not included or pressed upon. When you have thus surrounded the whole, bring the end through a slide of the fastening and leave it: thus the operation is done. A piece of plantain leaf tied about four inches above the bud, so as to drop over it, will shade it from the sun and promote its growth. In the course of a fortnight you will be enabled to judge if it has taken, by its full and green appearance: if otherwise, it looks black and shrivelled. When the shoot is six or eight fingers long you may then cut off the heads of the stocks, leaving about two inches above the insertion of the bud.

Observe, as soon as your buds have shot out strong, that you loosen the bandages below, suffering the upper to remain a short time longer; hemp or string should on no account be used, as they cut through the rind and injure the growth of the shoot. A bud of sweet brier grafted on the stock of a Rose Edwards threw out a shoot full three inches, in the course of twenty days after the bud was first tied on, in the month of February, at Hyderabad, in the Deccan.

Native Method of Budding.—Is very simple, and in general most successful. An incision of the length required is made perpendicularly in the stock; they then take hold of it with their hands, both above and below the cut, and bending the stock forward towards them, they thus separate the bark and form an opening sufficient to introduce the bud, which, when placed in its right position, the stock is allowed to regain elasticity, and the bark or rind closes tightly round the bud: a ligature of plantain leaf shreds is bound round the perpendicular incision, omitting of course the bud, and allowing it free space to grow.

When you remove these plants into the situations in which they are to remain, and they appear to have taken root well, then you may cut off the head of the stock in a slanting direction, near the bud, in a clean and careful manner.

Circulation of Water in Soils.—It is necessary for the due nourishment of plants, that the water by which soils are moistened have a proper movement or circulation. When the soil is so loose and porous as not to retain moisture, or so stiff and compact as not to allow the water it imbibes to circulate, in the first place, when the circulation is too rapid, so that it is carried off before it can be taken up by the root fibres, and conveyed to the plants, is of course detrimental; as in the latter instance, where the mouths of the minute tubes are pressed upon and obstructed, so that no nourishment obtains admission. If a soil is very porous, the water naturally sinks into it and moves towards the bottom, which, if not of a firmer texture, it will naturally drain away; and as the heat expands the water nearest the surface into vapour, and raises it into the air, as soon as by this means the surface becomes dry, the moisture below will gradually rise in the same way, leaving little or no further nourishment for the plant. But again, if in such a soil there is at a little depth, of two feet or so, a stiff clay or rock, the water then

settles, and being out of the reach of the sun's influence to raise it, it becomes necessary to drain it off, otherwise, for want of circulation, it becomes deleterious to the growth of the plant: water should never be allowed to stagnate round plants, but always have a free movement or circulation, otherwise the mouths of the suckers become pressed upon and obstructed, and of course the nourishment checked in its progress. Water, when stagnated, soon becomes exhausted of the nutritive material with which it may have at first been mixed.

CLEARING OF FRUIT TREES, &c.—This is a very necessary part of the business of a gardener who wishes his trees to look well and produce a good crop of fruit. In the first place, keep all the space round your trees, if possible, clear of weeds, which only can be done by cutting and hoeing them up, and then removing the same—or scatter under your trees a small quantity of hemp stalks; this not only prevents the growth of weeds, but, when it decays, forms a very beneficial manure. All dead branches should be cut away in a smooth manner, either with a saw, or knife, and suckers never allowed to spring up from the roots, unless wanted for stocks. Another important thing to attend to, is, to observe if there are any insects which have bored holes in the woody part of the trees, and which may immediately be known by seeing their holes, or a quantity of dry sawdust, in appearance, hanging by light filaments of thread from the entrance, in which an insect like a large caterpillar has taken up his quarters, and is working his way either into the sap of the tree or along the bark, both of which are equally injurious; and to remove them as soon as possible is necessary. The method to effect this is very simple. Provide yourself with a strong infusion of assafœtida, and some dough made with common flour and water: pour a small quantity of the infusion into the hole, enough to fill it up, after having removed all the dirt round it; then stick a small piece of the dough, about the size of a pigeon's egg, over the hole, and let it remain. In the course of an hour or two, if you take off the dough, you will find the insect to have embedded himself in it. This plan answers when you have other work in hand and cannot wait the result of the infusion which has been put into the hole: if you can, generally in five minutes, if the insect is there, you will observe a bubble in the mixture; this is occasioned by the insect moving, and shortly after he will be seen crawling up to the top, presenting a thick horny head: then, with a long pin, or thorn, gently run it slanting through the neck and give the insect a sharp twist out. They are sometimes two or three inches long, and very destructive, as they attack every fruit-bearing tree, as well as others. When insects infect the leaves of trees, they must be destroyed either by smoking the tree or picking them off. Sulphur thrown on burning charcoal is a very effective method of destroying insects; the fumes must be allowed to pass over the branches. A pound of sulphur will suffice for very many trees.

COLOUR OF FLOWERS.—The colour, smell, and nutritive qualities, of plants, depend for their production chiefly on the action of light. The propensity of plants to turn to the light depends solely on the hardening and stiffening of one side whilst the other remains soft and pliable; the side exposed to the light has its moisture carried off by evaporation, and is rendered more firm, contracted, and shorter, than the one less exposed.

COMPOSTS—are mixtures of several earths, or dungs, for the improvement of the general soil under culture, or for the culture of particular plants. In res-

pect of composts for the amendment of the general soil of the garden, the quality must depend upon the natural soil; if this be light, loose, or scanty, it may be assisted by the addition of heavy loam, clays, &c., from ponds, tanks, and ditches. On the other hand, heavy clays and stubborn soils may be assisted by light composts of sandy earth, all kinds of ashes, rotten bark, all kinds of sawdust, and other similar light opening materials that can be procured.

Composition for Wounds in Trees.—I have found the following composition, prepared after the recipé of Mr. Forsyth, to answer extremely well, and old fruit trees, such as the mango, have evidently been much benefited by having the composition applied after removing the cankered and decayed parts: I have also used it to the end of cut branches when pruning trees:—"Take a large basket of "fresh cowdung, half a basket of fine lime rubbish from old buildings, half a "basket of woodashes from the kitchen, and about four double handsful of the "finest sand procurable: the last three articles must be well sifted and mixed to-"gether, working the whole up with a powrah or beater until it is quite smooth; "then lay on the plaster about one-eighth of an inch thick all over the part "where the wood or bark has been cut away, finishing off the edges to a thin "surface." "Then take a quantity of dry powder of woodashes, mixed with a "sixth part of the same quantity of burnt bones. Sprinkle this powder over the "surface of the plaster till the whole is covered over with it: let it remain to ab-"sorb the moisture, then apply more powder, gently rubbing it with the hand "till the whole plaster becomes a dry surface."

Cuttings.—Propagation by cuttings is simple when applied to fast-growing hardy shrubs, such as the Laurel, Grape, Fig, &c., but with some others, such as the Myrtle, Cypress, &c., becomes one of the most delicate and difficult modes of continuing the species. And it must be considered as to the choice of cuttings, their preparation, their insertion in the soil, and their future management.

Cuttings, choice of.—Those branches of trees or shrubs thrown out nearest the ground, and especially such as recline, or nearly so, on the earth's surface, have always the most tendency to produce roots: even the branches of resinous trees, which are extremely difficult to propagate by cuttings, when reclining on the ground, if accidentally covered with earth in any part, will often throw out roots, as in the Fir, Cyprus, &c.: cuttings should therefore be preferred from those shoots nearest the stem and ground. The proper time for taking cuttings is when the sap is in full motion, in order that, returning by the bark, it may form a callus or protruding ring of granular substance between the bark and wood, whence the roots proceed. As this ring is generally best formed in ripened wood, the cutting, when taken from the mother plant, should contain a part of the former year; or in plants which grow twice a year, of the wood of the former growth; or in evergreens, such wood as has begun to ripen or assume a brownish color. This is the true principle as to the choice of cuttings as to time, but there are many sorts of trees the cuttings of which will grow at any season in India, if protected from the hot land winds. In some plants, where the sap is comparatively at rest, the principle of life is so strong, and so diffused over the vegetable, that very little care is requisite for their propagation. Cuttings from herbaceous plants should be chosen from the low growths which do not indicate a tendency to blossom, but they will succeed in many cases from the flower stems, and border flowers, as the Dahlia, Rocket, Wall-flower, Nasterteum, &c.

The propagation of cuttings is guided by this principle, that the power of protruding buds or roots resides chiefly, and in most cases entirely, at what are called the axilla or joints, at those parts where leaves or buds already exist: hence all cuttings should be smoothly cut across with the smoothest and soundest section possible at an eye or joint, and the choice of a bud should be in wood somewhat ripened or fully formed, and the section should be made in the wood of the growth of the preceding season, or as it were in the point between the two growths. It is true that some sorts of cuttings, such as the Grape, Mulberry, &c., not only throw out roots from the ring of granulated matter, but also from the sides of every part of the stem inserted in the soil; but all plants which are difficult to root, such as Heaths, Camillias, Orange, &c., will be found in the first instance to throw out roots only from the ring of herbaceous matter abovementioned: and hence the necessity of properly preparing the cuttings must be an obvious advantage. It is not a good practice to take off the whole of the leaves of cuttings, as the leaves in many instances supply nourishment to the cutting until it can sustain itself. Leaves alone will even strike root, and form plants, in some instances.

Cuttings which are difficult to strike may be rendered more tractable by previous ringing. If a ring be made on the shoot which is to furnish the cutting, a callus will be created, which, if inserted in the ground after the cutting is taken off, will freely emit roots. A ligature would perhaps answer the same purpose. The amputation, in case of the ring or ligature, must be made below the circles, and the cutting must be so planted as to have the callus covered with earth.

The insertion of Cuttings—may seem an easy matter, and none but a practical cultivator would imagine that there could be any difference in the growth between cuttings inserted in the middle of a pot and those inserted at its sides. Yet such is actually the case, and some sorts of trees if inserted in a mere mass of earth, will hardly, if at all, throw out roots, while if they are inserted in sand or in earth at the side of the pots, so as to touch the pot in their whole length, they seldom fail of becoming rooted plants. Some cuttings will be found to strike more easily if their lower ends are placed on a piece of broken pot or tile, or when touching a stratum of gravel; therefore with cuttings which are found difficult to strike root, it is advisable they should be so laid in pots as to be made to touch the bottom. A large tumbler or glass placed over a cutting, if small, will often facilitate its growth.

The management of Cuttings.—No cutting requires to be planted deep, though such as are large ought to be inserted deeper than such as are small. In the case of evergreens, the leaves should never touch the soil, otherwise they will damp and rot off: a leaf laying with its under part on a wet soil, or on water, will decay and rot as fast as if plucked and exposed to the sun. And in the case of tubular-stalked plants, which are not in general very easily struck, owing to the water lodging in the tube and rotting the cutting, both ends may in some cases be inserted in the soil (forming a half circle): besides, with a greater certainty of success, two plants will be produced. Too much light, air, water, heat, or cold, are alike injurious, and to guard against these with tender sorts, is that of enclosing an atmosphere over the cuttings by the means of a bell or hand glass. This preserves a uniform stillness and moisture of atmosphere. Immersing the pots in earth (if the cuttings are in pots) has a tendency to preserve a moisture to

their roots; and shading or planting the cuttings, (if in the open air) in a shady situation, prevents the bad effects of the excess of light.

DESCENT OF THE PULP.—The simple fact with respect to leaf buds and branch buds seems to be that they are expanded in spring by the sap, and when sufficiently so to permit the air and light to convert this into pulp, it descends into the bark at their base, but it is not until the leaf is fully expanded that any new wood is or can be formed; consequently it is the leaf, not the leaf bud, which is the chief agent in this process.

DESTROYING INSECTS ON VEGETABLES, &C.—Sprinkle the leaves over with very fine pounded sulphur tied up in a muslin bag, or with woodashes from the kitchen. Fumigate also trees with tobacco smoke, or sprinkle the leaves with a solution made after the following manner: to three parts of lime add one of sulphur, and boil both together in one hundred parts of water: you may also soak the seed in this.

For destroying White Ants, take a bundle of the twigs of the Sarcostemma Vini nali; put it into the trough or pot by which the bed or field is watered, along with a bag of salt hard packed, so that it may only dissolve gradually. Water so impregnated destroys insects without injuring the plants. Dry twigs answer as well as green. It abounds in the Deccan, and all Gogah and the coast of Kattywar.—Hind. name, Soom.

DEW—is the moisture insensibly deposited from the atmosphere on the earth. The moisture is precipitated by the cold of the body on which it appears, and will be more or less abundant—not in proportion to the coldness of that body, but—in proportion to the existing state of the air in regard to moisture. It is commonly supposed that the formation of Dew produces cold, but, like every other precipitation of water from the atmosphere, it must evidently produce heat.

DIGGING.—This is almost always performed by the Pickaxe, and I do not know but it is the most effectual method (the spade is never used by natives.) When the ground will admit, the plough, probably, is a quicker method. The earth thus turned up admits of being easily worked, and the clods knocked to pieces, besides picking out the weeds, only that the plough is apt to disturb the roots of trees in the neighbourhood, and the bullocks the trees themselves.

EARTH AND SOILS.—Earths are the production of the rocks which are exposed on the surface of the globe, and soils are earths mixed with more or less of the decomposed organized matter afforded by dead plants and animals. Earth and soils therefore must be as various as the rocks which produce them. The surface earth, or that which forms the outer coating of the dry parts of the globe, is formed by the detritus of worn off parts of rocks, and rocky substances. Earths are therefore variously composed, according to the rocks or strata which have supplied the particles. Sometimes they are formed from slate rocks, as in blue clays; at other times from sand stone, as in siliceous soils; and mostly of a mixture of clayey, slatey, and limestone rocks, blended in proportions as various as their situations. In process of time the decay of vegetables and animals form additions to the outer surface of the earth, and constitute what are called soils. As soon as the smallest layer of earth is formed on the surface of the rock, the seeds of Lichens, Mosses, and other imperfect vegetables, which are constantly floating in the atmosphere,

and which have made it their resting place, begin to vegetate ; their death, decomposition, and decay, afford a certain quantity of organizable matter, which mixes with the earthy materials of the rock. In this improved soil more perfect plants are capable of subsisting. These in their turn absorb nourishment from water, and the atmosphere, and after perishing, afford new materials to those already provided. The decomposition of the rock still continues, and at length, by such slow and gradual processes, a soil is formed in which even forest trees can fix their roots, and which is fitted to reward the labors of the cultivator.

EARTHING UP.—This is performed by the hand and a small spade, or with a large sized hoe ; it consists in turning up the ground round the stocks of plants, so as to support and nourish them,—a thing very essential in the growth of all kinds of vegetables, potatoes, peas, beans, &c.

ESCULENT ROOTS—delight in a light, rather sandy, deep and well stirred soil. It must be dry at bottom, but a moist atmosphere and moderate temperature are greatly favourable to the growth of them.

ESPALIER TREES.—Such as are suitable for, or are planted against, rails or upright trellis-work, much more suitable for India than walls.

ETIOLATION.—A disease of plants which destroys their verdure, and renders them pale : it arises from the want of the agency of light, and may also arise from the depredation of insects nestling in the radicle, and consuming the food of the plant, and thus debilitating the vessels of the leaf, so as to render them unsusceptible of the action of light.

EXPOSURE AND SHELTER.—As solitary trees become greatly larger than those that are crowded, whilst there are roots always proportioned to the branches, the same is true with regard to all or most garden plants, which extend in proportion to their room. Hence the necessity of wide planting when required to have plants with spreading heads.

FOOD FOR PLANTS.—Vegetables cannot live without a supply of food, and are incapable of moving to look for it. The food of all plants varies but little.

The difference between some garden plants and others is in their greater delicacy ; hence the nourishment given to them requires only a little more delicacy in its preparation.

Young plants require, on first germinating from seed, a different nourishment than when more advanced,—after they have exhausted the nourishment in the seed lobes and seed leaves.

Plants have no stomach for digestion, and are only nourished by extending their roots, and by the absorption of necessary fluid, by the mouths at their extremities, of portions of animal and vegetable substances dissolved in the soil, and these taken up by the suckers, or mouths of the plants.

FIBRINA—is a peculiar substance which chemists extract from the blood and muscles of animals. This substance constitutes the fibrous part of the muscles, and resembles gluten in its appearance and elasticity, and as a substance possessing the same properties, has been found by Vauquilin in the juice of the Papaw tree : it is called vegetable fibrina.

GERMINATING OF SEEDS.—Some seeds, such as coffee, require to be sown immediately on being gathered, otherwise the nutrient matter contained in the

shell becomes too hard to be dissolved in water. Seeds gathered before they are quite ripe germinate sooner than very ripe ones; because the nutrient matter is less hard, and more easily diluted with water. But though seeds when gathered before they are quite ripe, germinate sooner, it does not follow that they will produce the best plants.

GLUTEN—is that part of the paste formed from the flour of wheat that remains unaffected by the water after all the starch contained in it has been washed off. This is a tough and elastic substance, of a dark white color, without taste, but of a very peculiar smell: it is found in fruits and grain such as Peas, Beans, Barley, Acorns, Chesnuts, Apples, Quinces; also in leaves, such as Cabbage, Cresses, Saffron, &c.; and also in the petals of the Rose; and is the most important of all vegetable substances.

GRAFTING.—The most common method, and in general use in the Deccan, is by approach, although I have been told that brown and stock-grafting are both practiced by the gardeners in Bombay and Salsette: the latter is done by making a hole in the stock and inserting the scions therein while the tree is growing, but nine out of ten generally fail.

HAUM OR HAULMN.—The lower part of the straw after the ears are cut off: in gardening the term is generally applied to leguminous vegetables after their produce has been gathered.

HEADING.—The growing of the leaves of a plant into a roundish head or loaf.

HEAT—is essentially necessary for the growth of plants, as it is obvious that no plant could take up frozen liquids. The process of fermentation and putrifaction, by which are produced the supply of Carbonic Acid gas, Humic acid, * and Azote, is indispensible to vegetation, as it cannot go on without it.

HERBARIUMS.—The dried plants far surpass either drawings or descriptions in giving complete ideas of their appearance. When plants are well dried, the original forms and positions of even their minutest parts (though not their colors) may at any time be restored by immersion in hot water. The mode or state in which plants are preserved is general desiccation, accompanied by pressing. The greater part of plants dry with facility between the leaves of books or blotting paper, the smoother the better. If there be plenty of paper, they often dry without shifting, but if the specimens are crowded, they must be taken out frequently, and the paper dried before they are replaced. Some vegetables are so tenacious of their vital principle, that they will grow between papers; the consequence is a destruction of their proper habit and colors. It is therefore necessary to destroy the life of such by immersion in boiling water, or by the application of a hot iron such as is used for linen, after which they are easily dried. The herbarium should be kept in as dry a place as possible, and free from insects.

HORTUS SICCUS.—After having collected as good a specimen as possible of the plant, lay it flat, disposing of it in the best manner, so that the flowers and leaves do not interfere with each other, betwixt a sheet of white paper: put this on a quire of blotting paper, and also a quire over it, and then apply a weight on the top—

* Humic acid—the principal ingredient of all manures.

books answer this purpose very well. The next day put dry blotting paper as before, first opening the sheet of paper, and making any alterations in the disposition of parts. Dried specimens are to be fixed into slips of paper or glued with common glue. These should be kept in shelves or drawers. To prevent the depradation of insects, Dr Smith recommends a solution of corrosive sublimate, (muriate of mercury,) in some spirits of wine, with which the plants are, when dry, to be gently moistened.

Imperfect Plants.—Apparently defective in one or other of the more conspicuous parts or organs, whether conservative or reproductive, are denominated imperfect, and are called Cryptogamus, because their organs of fructification are not yet detected, or are so minute as to require the aid of a microscope to render them visible, as in the Filices, Musci, Hepatica, Alga, and Lichene, also Fungi.

Improvement of Soils.—Soils may be rendered more fit for answering the purposes of vegetation by pulverisation, by consolidation, by exposure to the atmosphere, by an alteration of their constituent parts, by changing their condition with respect to water, by changing their position with respect to atmospherical influence, and by a change of the kind of plants cultivated. All these improvements are independently of the application of manure. The fibres of roots take up the extract of the soil by intro-susception : the quantity taken up therefore will not depend alone on the quantity in the soil, but on the number of the absorbing fibres. The more the soil is pulverised, the more these fibres are increased : and the more extract is absorbed, the more vigorous does the plant become. Pulverisation, therefore, is not only advantageous, previous to planting or sowing, but also during the progress of vegetation, when applied in the intervals between the plants. In this last case it operates also in the way of pruning, and by the cutting off the extending fibres, causes them to branch out numerous others, by which the mouths or pores of the plant are greatly increased, and such food as is in the soil has the better chance of being sought after and taken up by them.

Pulverization increases the capillary attraction, or sponge-like property of soils, by which their humidity is rendered more uniform. It is indeed that capillary attraction must be greatest when the particles of the earth are finely divided, for gravel and sand hardly retain water at all, while clays not open by pulverization, or other means, either do not absorb water, or when by long action it is absorbed, they retain too much. Water is not only necessary to the growth of plants, as such, but it is essential to the production of extract from the vegetable matters they contain, and unless the soil, by pulverization or otherwise, is so constituted as to retain the quantity of water requisite to produce this extract, the addition of manures will be in vain. Manure is useless to vegetation until it becomes soluble in water, and it would remain useless in a state of solution if it so abounded as wholly to seclude air, for then the fibres or mouths, unable to perform their functions, would soon decay and rot off ; as is the case with flowers or shrubs in pots where there is no opening, so that the air cannot circulate round the roots.

Pulverization leads to the increase of vegetable food. Water is known to be a condenser and solvent of carbonic acid gas ; which, where the land is open, can be immediately carried to the roots of vegetables, and contribute to their growth ;

but if the earth be close, and the water lie on or near its surface, then the carbonic gas, which always exists in the atmosphere, and is carried down by rains, will soon be dissipated. An open soil, therefore, is always suitable for effecting those changes in the manure itself which are equally necessary to the preparation of such food. Animal and vegetable substances exposed to the alternate action of heat, moisture, light, and air, undergo spontaneous decomposition which would not otherwise take place.—A very good compost for improving stiff soils is made by equal parts of lime and woodashes with two parts of sand.

In soils that are very light, it is advantageous to roll or beat down seeds, as it prevents the light soil from drifting, and also (a very material point) hinders ants from carrying them away.

Stagnant water may be considered as injurious to all the useful classes of plants, by obstructing perspiration and intro-susception—thus diseasing their roots and submerged parts.

INARCHING, OR GRAFTING BY APPROACH.—This is a very common method all over India, and is performed by bringing the stock you would graft upon close to the tree from which you wish to take a branch, and which remains united until the two branches are firmly connected together: the stem is then divided near the stock and removed.

Process.—Either having the stocks and trees designed to inarch from growing in the ground near together, or in pots, or that you wish to inarch some branches of trees, and that the said branches are three or more feet from the ground, and suppose the stocks you would graft upon to be in pots or boxes, in that case you must erect a slight stage close to, and as high as, the branches of the tree, for placing the stocks upon. Thus far, then, in either case, you have proceeded. Take one of the branches you desire to inarch, and bring the body of the said branch to touch that of the stock at such a convenient height, where the stock and graft is nearly of the same size, and mark the parts where the stock and graft will most readily unite; then, in that part of the branch, pare away the bark and part of the wood about three inches in length, and in the same manner let the rind and wood be pared off that side of the stock where the branch is to be joined, the same length and breadth, so that both the cut parts may exactly join, rind to rind, and be united in the middle; let them then be immediately tied together with tape, as closely and firm as possible; then tie round the whole in a smooth manner. A piece of wax cloth, or else a composition of clay and cow-dung, must be fastened round the whole: the objection to the latter method is, that it becomes the receptacle for insects, ants in particular, and you are in danger of having your grafts spoiled. After this, to prevent the wind from displacing the grafts, a strong stake should be driven in the ground, close to the stock, to which they should be tied. The stock and graft should remain in this position for at least ten weeks, though sometimes they will be united much sooner. This method of raising trees may be followed at any season, except in the rains.

INSECTS—which infect the plants are almost as numerous as the plants themselves, almost every species having a particular insect which it seems destined by nature to support. The eggs of insects seldom increase in size from the time they have been deposited by the parent until they are hatched. Different

species of insects remain enclosed in the egg for different periods : some continue enclosed in the egg for months, others only for a few days. The insect in its second or Caterpillar state is usually known by the name of Eruca or Larva. The larva of insects differ very much from each other, according to the several tribes to which they belong :—those of the Butterfly (Papilio) and Moth (Phalina) are generally known by the name of Caterpillars; those of the Beetle, (Scarabeus) and those that inhabit the water, are called grubs.

LAWN.—In gardening, a surface of turf or grasses, kept short by frequent cutting, and generally situated near the house.

LIME.—If quick lime, either fresh, or burnt, or slaked, be mixed with moist vegetable substances, it soon destroys their texture, and forms a mixture the greater part of which can be dissolved in water, thus rendering what was previously useless fit for the food of plants. It is much more useful in farms than gardens.

LIGHT—is essentially necessary to the growth of plants, as also its exclusion for blanching or etiolation, as no exposure to cold or fresh air would produce toughness and hardiness, if plants were kept in the dark ; and no absence of cold or fresh air would produce blanching if light were admitted. A partial exclusion of light causes plants to be pale and sickly, as in the shade of thick woods or under trees, as is the case where plants shoot out long branches in search of air and light : hence the term said to be drawn.

Light appears to be as necessary to the health of plants as air or moisture. A plant may indeed grow without it, but it does not appear a species could be so continued. Under such a privation, the parts which are usually so grown assume a white color, as is the case with vegetables grown in a cellar, or protected by a covering for the sake of producing this very effect : thus Celery, Endive, &c., is in this manner blanched or etiolated.

" The part of the process of vegetable life for which light is especially essential, appears to be in the functions of the leaves; these are affected by this agent in a remarkable degree. The moisture that plants imbibe is by their vital energies carried to their leaves, and is there brought in contact with the atmosphere, which, besides other ingredients, contains in general a portion of carbonic acid. So long as light is present, the leaf decomposes the carbonic acid, appropriates the carbon to the formation of its own proper juices, and returns the disengaged oxygen into the atmosphere, thus restoring the atmospheric air to a condition in which it is more fitted, than it was before, for the support of animal life."

" The plant thus prepares the support of life for other creatures at the same time that it absorbs its own. The greenness of those members which effect that color, and the disengagement of oxygen, are the indications that its vital powers are in healthful action. As soon as we remove light from a plant these indications cease : it has no longer power to imbibe carbon, and disengage oxygen, but, on the contrary, it gives back some of the carbon already obtained, and robs the atmosphere of oxygen for the purpose of re-converting this into carbonic acid."—*Whewell.—Bridgewater Treatise.*

LIQUID MANURES—are formed by infusing rich dungs, as those of fowls,

sheep, pigs, &c, or blood, in three or four times their bulk of water, and the application of the extract so procured is made at the usual season of watering, taking care to apply it only to the roots.

The value of liquid manure is well known in England to gardeners, and there is no reason why it should not be of equal importance to the agriculturist in this country; and if the drainings from the dung heap was only preserved, as it might be, during the rains, in tanks or other reservoirs, and then mixed with loam and kept under a shed, it would prove the best compost for flowers or vegetables. A trial that was given between the liquid manure and Guano, some short time ago, by Mr. Booth, of Carlew, by direction of Sir Charles Lemon, clearly shows that the former had the preference. The mere drainings from the farm-yards were used in the proportion of 100 gallons to the tenth part of an acre,—not in the strong brown coloured state it appears when running from the stables or cattle-houses, but diluted with water in the proportion of one gallon of liquid to two of water. The appearance of the corn was strong and healthy; the weight of straw was 300 lbs., of corn 256 lbs., which measured 5¼ bushels, or 52½ bushels per acre.

The result of Guano where 16½ lbs. was applied to the tenth part of an acre, gave a return of 280 lbs. of straw, 252 lbs. of corn, or 5 bushels, equal to 50 bushels the acre. The cost of the guano per acre was £1 0 0—the liquid manure nothing.

The following table will readily show the results of several experiments with artificial manures, applied as a top-dressing to Barley in 1843, in England, strongly recommended—Nitrate of Soda, Sulphate of Soda, Sulphate of Ammonia, and Stott's soluble manure—a preparation somewhat resembling the last. By this table will be seen the fact of the common drainings of the farm-yard giving a return equal to that obtained from the finest manure of which we have any knowledge.

Kind of Manure.	Quantity used on one-tenth of an Acre.	Price.	Produce of one-tenth of an Acre.			Cost per Acre.			Rate of produce per Acre.			
			Straw.	Corn.	Bushels.				Straw.			Corn.
	lbs.	s. d.	lbs.	lbs.		£	s.	d.	cwt.	qrs.	lbs.	bush.
Nothing.	—	—	233	200	4		—		20	3	6	40
1. Nitrate of Soda.	33½	6 0	199	178	3⅜	3	0	0	17	3	2	37½
2. Sulphate of Soda.	33½	3 0	264	215	4⅛	1	10	0	23	2	8	43⅜
3. Guano.	16½	2 0	280	252	5	1	0	0	25	0	0	50
4. Sulphate of Ammonia.	22½	3 11	269	232	4⅜	1	19	2	24	0	2	47½
5. Stott's soluble manure.	12 Galls.	4 0	288	257	5⅜	2	0	0	25	2	24	53¾
6. Drainings of Farm-yards.	100	—	300	256	5¼		—		26	3	4	2½

Excellent Dressing for Gardens.—The use of the following manure is described as being so beneficial as to be followed by a fourfold increase of produce, and is well adapted for the flower and kitchen garden. In a pit about twenty feet long, twelve or fourteen wide, and fifteen or eighteen deep, put a layer of dung, and on that a layer of earth, and so alternately till the pile is elevated a foot or two above the level of the ground, watering each layer of earth with a

strong solution of saltpetre—this should be left undisturbed for six months. When this compost is moved, it will be found wholly converted into earth, presenting no trace of the dung.

Guano, like farm-yard dung, is variable in its composition. It is the dung of birds which feed on fish, and consists principally of salts of ammonia and phosphates, with a little soda and potash. Attempts are being made to produce an artificial guano by a mixture of the mean of the various salts which it contains, which shall be more uniform in character. In using these concentrated saline mixtures, it is hazardous to drill them in with the seed, as there is a danger of their killing it during germination: they should be used as a top-dressing, and sown by hand with care, so as to distribute it as equally as possible over the plot of ground.

LOAM—is a yellowish or brownish kind of clay, sometimes containing a considerable proportion of sand. It occurs in immense beds, and is found in almost every part of the world.

MANURE.—This term is applied indiscriminately to all substances which are known from experience either to enrich the different soils, or contribute in any other way to render them more favorable to vegetation.

In an agricultural point of view, the subject of manures is of the utmost importance. To correct what is hurtful to vegetation in the different soils, and to restore what is lost by exhausting crops, are operations in agriculture which may be compared to the curing diseases in the animal body, or supplying the waste occasioned by labour.

Rotted dung is very much superior in imbibing and retaining water to that which is fresh, unfermented, or beginning to ferment. The quantity of humic acid is considerably greater in rotted than fresh dung, and it approaches nearer to the best leaf mould or virgin loam.

Lime should never be applied with animal manures unless they are too rich, or for the purpose of preventing noxious effluvia: it is injurious when mixed with any common dung, and tends to render the extractive matter insoluble. It is beneficial to all new soils, especially where the salts of iron are found.

Animal and vegetable manures are to renovate worn-out lands by supplying new soluble and gaseous matter for the nourishment of the plant. This is not a permanent good, and requires to be constantly renewed, as it is found by experience that vegetable and animal substances, used as manure, are consumed during the process of vegetation. The Chinese use every animal and vegetable refuse; everything of disgusting appearance and offensive effluvia they collect carefully and use as beneficial agents in vegetation, thus converting the loathsome and revolting into wholesome and inviting. The great object in the application of manure should be to make it afford as much soluble matter as possible to the roots of the plants, and that in a slow and gradual manner, so that it may be entirely consumed in forming its sap and organised parts. Animal and vegetable manures can only nourish the plant by affording solid matter capable of being dissolved by water, or gaseous substances capable of being absorbed by the fluids in the leaves of vegetables.

The following compost has been used in England, and it is said to have dou-

bled the crops of potatoes and cabbages, and to be far superior to stable manure :—

Raise a platform of earth eight feet wide, one foot high, and of any length according to the quantity wanted. On the first stratum of earth lay a thin stratum of lime, fresh from the kiln : dissolve or slake this with salt-brine from the nose of a watering pot ; and immediately another layer of earth, then lime and brine as before, carrying it to any convenient height. In a week it should be turned over and carefully broken and mixed, so that the mass may be thoroughly incorporated.

Manures of Vegetable and Animal Origin.—Experience shows that vegetable and animal substances deposited in the soil are consumed during the progress of vegetation, and they can only nourish the plant by affording solid matters capable of being dissolved by water, or gaseous substances capable of being absorbed by the fluids in the leaves of vegetables; but such parts of them as are rendered gaseous, and that pass into the atmosphere, must produce a comparatively small effect, for gases soon become diffused through the mass of the surrounding air. The great object in the application of manure should be to make it afford as much soluble matter as possible to the roots of the plant; and that in a slow and gradual manner, so that it may be entirely consumed in forming its sap and organized parts. Mucilaginous, gelatinous, saccharine, oily, and extractive fluids, and solution of carbonic acid gas in water, are substances that, in their unchanged state, contain almost all the essentials necessary for the life of plants; but there are few cases in which they can be applied in their pure form: and vegetable manures, in general, contain a great excess of fibrous and insoluble matter, which must undergo chemical changes before they can become the food of plants.

It will be proper to explain the nature of these changes, of the causes which occasion them, and which accelerate or retard them; also of the products they afford.

If any fresh vegetable matter which contains sugar, mucilage, starch, or other of the vegetable compounds soluble in water, be moistened and exposed to air at a temperature from 55 to 80 degrees, oxygen will soon be absorbed, and carbonic acid formed: heat will be produced, and elastic fluids (principally carbonic acid gas, gaseous oxide of carbon, and hydro-carbonate) will be evolved, and a dark-coloured liquid, of a slightly sour or bitter taste, will likewise be formed; and if the process be suffered to continue sufficiently long, nothing solid will remain except earthy and saline matter, coloured by black charcoal. The dark-coloured fluid formed in the fermentation always contains acetic acid, and when albumen or gluten exists in the vegetable substance it likewise contains volatile alkali. In proportion as there is more gluten, albumen, or matter soluble in water, in the vegetable substances exposed to fermentation, so in proportion, all other circumstances being equal, will the process be more rapid. Pure woody fibre alone undergoes a change very slowly, but its texture is broken down, and it is easily resolved into new elements when mixed with substances more liable to change, containing more oxygen and hydrogen. Volatile and fixed oils, resins, and wax, are more susceptible of change than woody fibre when exposed to air and water, but much less liable than the other vegetable compounds: and

even the most inflammable substances, by the absorption of oxygen become gradually soluble in water.

Animal matters, in general, are more liable to decompose than vegetable substances: oxygen is absorbed, and carbonic acid and ammonia formed, in the process of their putrefaction. They produce fetid compound elastic fluids, and likewise azote; they afford dark-coloured acid, and oily fluids, and have a residuum of salts and earths mixed with carbonaceous matter.

The principal substances which constitute the different parts of animals, or which are found in their blood, their secretions, or their excrements, have been classed and analyzed by Sir Humphrey Davy and others. It is unnecessary to describe these minutely, but merely to state that a difference exists in each, and that the ammonia given off from animal compounds in putrefaction may be conceived to be formed, at the time of their decomposition, by the combination of hydrogen and azote. Except this matter, the other products of putrefaction are analogous to those afforded by the fermentation of vegetable substances; and the soluble substances formed abound in the elements which are the constituent parts of vegetables, in carbon, hydrogen, and oxygen.

Whenever manures consist principally of matter soluble in water, it is evident that their fermentation or putrefaction should be prevented as much as possible; and the only cases in which these processes can be useful are when the manure consists principally of vegetable or animal fibre. The circumstances necessary for the putrefaction of animal substances, and also of vegetables, are, a temperature above the freezing-point, and the presence of oxygen at least in the first stage of the process. To prevent manures from decomposing, they should be preserved dry, defended from the contact of air, and kept as cool as possible.

As different manures contain different proportions of the elements necessary to vegetation, so they require a different treatment to enable them to produce their full effects in agriculture.

All green succulent plants contain saccharine or mucilaginous matter, with woody fibre, and readily ferment. They cannot, therefore, when intended for manure, be used too soon after their death. Green crops intended for enriching the soil, should be ploughed in when the flower is beginning to appear, that being the period when they contain the greatest quantity of easily soluble matter, and when their leaves are most active in forming nutritive matter. Green crops, pond weeds, the parings of hedges or ditches, or any kind of fresh vegetable matter, requires no preparation to fit them for manure. The decomposition proceeds slowly beneath the soil; the soluble matters are gradually dissolved, and the slight fermentation that goes on, checked by the want of free communication of air, tends to render the woody fibre soluble, without occasioning the rapid dissipation of elastic matter.

When pastures are broken up and made arable, not only has the soil been enriched by the death and slow decay of the plants which have left soluble matters in the soil, but the leaves and roots of the grasses living at the time, and occupying so large a part of the surface, afford saccharine, mucilaginous, and ex-

tractive matters, which become immediately the food of the crop, and the gradual decomposition affords a supply for successive years.

Sir Humphrey Davy instituted a number of experiments in support of the theory he advanced, that straw should be used in an unfermented state; and there can be little doubt but that great loss is sustained by the farmer under the practice that still prevails to a great extent, of fermenting and re-fermenting the dung-heap by frequent turnings, as much of the gaseous matter is dissipated and lost by every operation.

Dry straw of wheat, oats, barley, beans, and peas, and spoiled hay, or any other similar kind of dry vegetable matter, is in all cases useful manure. In general, such substances are made to ferment before they are employed, though it may be doubted whether the practice should be indiscriminately adopted.

There can be no doubt but that the straw of different crops immediately ploughed into the ground, affords nourishment to plants, but there is an objection to this method of using straw, from the difficulty of burying long straw, and from it rendering the husbandry foul.

When straw is made to ferment, it becomes a more manageable manure; but there is likewise, in the whole, a great loss of nutritive matter. More manure is, perhaps, supplied for a single crop, but the land is less improved than it would be supposing the whole vegetable matter would be finely divided and mixed with the soil.

The dung of birds that feed on animal food, such as sea-birds, is considered the most powerful amongst the excrementitious solid substances used as manure. The guano, which is used to a great extent in South America, being the manure that fertilizes the sterile plains of Peru, is a production of this kind. It exists abundantly on the small rocky islands on the coasts, whither sea-fowl resort at certain seasons, and being gathered, forms an article of commerce.

Night-soil is a well known and powerful manure, and very liable to decompose. It differs in composition, but always abounds in substances composed of carbon, hydrogen, azote, and oxygen. From the analysis of Berzelius, it appears that a part of it is always soluble in water, and in whatever state it is used, whether recent or fermented, it supplies abundance of food to plants.

The disagreeable smell of night-soil may be destroyed by mixing it with quicklime, and if exposed to the atmosphere in thin layers, strewed over with quick lime in fine weather, it speedily dries, is easily pulverised, and in this state may be used in the same manner as rape cake, and delivered into the furrow of the seed. The Chinese, who greatly esteem this mixture, mix it with one third of its weight of fat marl, make it into cakes, and dry it in the sun. These cakes have no disagreeable smell, and form a common article of commerce in that populous empire. We shall hereafter describe the manner in which this and other "fertilizers" are prepared for sale in this country.

Pigeons' dung comes next in order as to fertilizing power. By digesting 100 grains in hot water for several hours, it will yield twenty-three grains of soluble matter; and this affords abundance of carbonate of ammonia by distillation, leaving carbonaceous matter, saline matter, and carbonate of lime, as a residuum. Pigeons'

dung when moist, readily ferments, but after fermentation contains less soluble matter than before, as when, in that state, 100 parts will yield only eight of soluble matter, with proportionably less carbonate of ammonia, making it evident that it should be applied as new as possible. The dung of domestic fowls possesses the same properties as that of pigeons, but in an inferior degree. Rabits' dung has been used with great success, and is best when laid on as fresh as possible.

The dung of cattle, oxen, and cows, contains matter soluble in water, and gives in fermenting nearly the same products as vegetable substances, absorbing oxygen, and producing carbonic acid gas.

The recent dung of sheep and goats afford, when long boiled in water, soluble matters, which equal from two to three per cent of their weight. These contain a small quantity of matter analogous to animal mucus, principally composed of a bitter extract soluble in water and in alcohol. They appear to differ little in composition, both giving ammoniacal fumes by distillation.

The part of the dung of cattle, sheep, and goats, not soluble in water, is the mere woody fibre analogous to the residuum of those vegetables that form their food after they have been deprived of their soluble materials.

The dung of horses gives a brown fluid, which when evaporated yields a bitter extract, which affords ammoniacal fumes more copiously than that from the dung of oxen.

If the pure dung of cattle is used as manure, there seems no reason why it should be made to ferment except in the soil : or if suffered to ferment, it should be only in a very slight degree. The grass in the neighbourhood of recently voided dung is always coarse and dark green, but this must not be attributed to a noxious quality in unfermented dung, but rather the result of excess of food furnished to the plants.

The dung of horses and cattle is however usually mixed up with straw and other matters, and consigned to a general heap called the dunghill, and as this contains a large proportion of fibrous vegetable matter, a slight incipient fermentation, sufficient to induce a disposition to decay and dissolve when brought upon the land and ploughed in, is certainly advantageous; but although this is necessary to the woody fibre, we must bear in mind that too great a fermentation is highly prejudicial to the composite manure in the dunghill, and it is better in fact that there should be no fermentation before the manure is used than that it should be carried too far. This is a very important matter to observe, for excess of fermentation tends to the destruction and dissipation of the most useful part of the manure, and the ultimate results of this process are like those of combustion.

Woodashes not too much reduced have been used with success as manure. A part of their effects may be owing to the slow and gradual consumption of the charcoal, which seems capable, under other circumstances than those of actual combustion, of absorbing oxygen so as to become carbonic acid.

Animal substances, such as putrid meat or carcases of beasts, require no chemical preparation to fit them for the soil. The object of the farmer should be to blend them with earthy constituents in a proper state of division, so as to prevent their too rapid decomposition. After taking the skin off dead animals, they

should be covered with six times their bulk of soil mixed with one part lime, and suffered to remain for a few months, mixing a little more quicklime with the mass at the time of its removal, which will destroy the effluvia.

Fish is a powerful manure, and should be ploughed in fresh, but not in too great quantities, or the crop will be rank. In Cornwall, where this manure is very general in the pilchard season, they mix the fish with sand or seaweed. There is a small fish, called the stickleback, also applied as manure in the fens of Lincolnshire and other counties. The operation of fish as a manure is easily explained. The skin is principally gelatine, which from its slight state of cohesion is readily soluble in water. Fat or oil is always found in fishes; and their fibrous matter contains all the essential elements of vegetable substance. The effects of a manuring of fish are apparent for several years.

Bones have lately come into great use as a manure, and a powerful auxiliary they are to a tenant entering upon a worn-out farm, being cheap, easy of carriage, available in all situations, and insuring a crop. The more divided they are, the more powerful their effect; but when broken instead of ground to dust, they are more lasting.

The basis of bone is constituted by earthy salts, principally phosphate of lime, with some carbonate of time, and phosphate of magnesia: the easily decomposable substances in bone, are fat, gelatine, and cartilage, which seems of the same nature as coagulated albumen.

Horn is a still more powerful manure than bone, as it contains a larger quantity of decomposable animal matter: 100 grains of ox-horn yield only 1.5 grains of earthy residuum, and not quite half of this is phosphate of lime. The shavings and turnings of horn form an excellent manure, the animal matter in them appearing of the nature of coagulated albumen, which is slowly rendered soluble by the action of water. The earthy matter in horn, and still more in bones, prevents the too rapid decomposition of the animal matter, and renders the effects very durable.

Blood contains certain quantities of all the principles found in other animal substances, and is therefore a very good manure.—*Magazine of Domestic Economy.*

Parasitic Plants.—Such as root into other living plants, and derive their nourishment from thence.—Some root into the stem or branches, as (viscus) the Misletoe; others attach themselves to the root, as Hypocistus.

Peaty Soils.—The formation of peaty soils is produced from very opposite causes, and it is interesting to contemplate how the same effect may be produced by different means, and the earth, which supplies almost all our wants, may become barren, alike from the excessive application of art or the utter neglect of it.

Perfect Plants—are divided into conservative and reproductive. The conservative organs are such as are absolutely necessary to the growth and preservation of the plant, including the roots, trunk, branch, leaf, and fruit.

Preparing Ground.—Having selected your spot, which you wish to prepare for either sowing crops or making a plantation, the first thing to be done is to clear it of weeds by drying or ploughing the whole up well, exposing the earth to the action of the sun and air, then breaking up the clods of earth and removing the weeds, which should be burnt on the spot, as the ashes form an excellent manure,

and you are certain that the weeds are destroyed. If your ground is of a clayish soil, which is a thing seldom found in the Deccan, the best thing you can add to it is brick dust or ashes; if of a light nature, the common manure, procurable in almost all situations in the neighbourhood of towns and villages, mixed with the mud from the dry beds of tanks. If common manure is scarce, see the artificial compost recommended under the head Manure.

PROPAGATING BY CUTTINGS.—The choice of cuttings should be made from the side shoots of plants, rather than from their summits or main stems, as the strength and health of side shoots being equal to those nearest the ground should be preferred. The proper time of taking cuttings from the mother plant is when the sap is in full motion, in order that when returning by the bark it may form a callus, or protruding ring of granular substance, between the bark and wood, whence the roots proceed. As this callus, or ring of spongy matter, is generally best formed in ripened wood, the cuttings, when taken from the mother plants, should contain a part of the former year; or in plants which grow twice a year, of the wood of the former growth; or in the case of plants which are continually growing, such wood as has begun to ripen, or assume a brownish color. The cuttings will vary in length, according to their strength and manner of growth, from six inches to a foot; they should be planted in a shady situation, or else protected from the sun by mats or otherwise. The distance of each should be from six to twelve inches apart, or even more where they grow quick and are likely to form large plants; great care is also requisite that, in laying down the cuttings, they are put clear into the ground without injury to the bark.

PROPAGATING BY LAYERS.—The work of laying the branches of trees, or shrubs, is easily performed, though it is not every tree that can be propagated in this manner. The first thing necessary to be done, is to clear and dry up the ground round the tree or plant you propose to take layers from; then gently bend down the branch, after having cleared it of all superfluous shoots, and lay it in the ground about six inches deep, leaving the top uncovered—then put a stone on the earth that covers the shoot, sufficiently large to keep it in its place: wooden pegs are not so serviceable, from being apt to get loose from the mode of irrigation pursued in India, and also the white ants generally destroy them. Should the branch be so high, or so strong, as not easily to be bent down, it may be necessary to cut a notch in it, in a sloping direction, so as to make it bend more easily; then split the stem with a knife, towards a bud in that part of the branch which is laid in the ground; this promotes its throwing out fibres, and therefore should be attended to. It is advisable not to remove the layer until it has been separated from the parent stock for a fortnight or more.

PROPAGATING BY PIPINGS.—This method is mostly adopted for the increase of carnations and pinks, and performed in the following manner: take one of the suckers of either the above flowers and divide the top short with a knife, just above the third joint; take the head of the shoot between the finger and thumb of one hand, and with the other hold the lower part of the shoot between a pair of leaves; then pulling the head of the shoot gently it will readily come out of the socket—hence it is called the piping. These pipings are to be inserted in finely prepared earth, to the depth of the first joint or pipe.

PRUNING—consists in removing all superfluous branches either for the pur-

pose of increasing the fruit, making it bear better, and more regular in its appearance, or enlarging the tree. Though an operation in general practice, it is nevertheless but by few properly understood, and is only to be acquired by practice and observation, bearing in mind the various modes in which each tree is disposed to produce its fruit or flower, and being careful to remove such branches and slips only as may be necessary, without disfiguring or injuring the tree, &c. Be careful in removing decayed branches, that you cut them clean down to the place from which they were produced, otherwise that part of the branch which is left will also decay and prove hurtful to the tree.

RADIATION—is the spreading of heat, which arises from heat passing from a hot body to a cooler one near it. The spreading of heat takes place between the surface of the ground and the air when the air is cold: though the soil be warm it soon loses its heat, and dew or hoar frost is formed on the ground, or grass, by the moisture diffused in the air. But when the sky is covered with clouds, the spreading and loss of heat is in a great measure prevented, and hence there is no dew or hoar frost found on a calm cloudy night. Hence the use of protecting plants by a covering of matting, which stops the heat of the soil from spreading about, and being lost in the air.

REPRODUCTIVE ORGANS—are such parts of the plants as are essential to its propagation; it includes the flower, with its immediate accompaniments, or peculiarities, the flower, stalk, receptacle, and inflorescence, together with the ovary or fruit.

RUNNERS—are young shoots issuing from the collar or summit of the root, and creeping along the surface of the soil, but producing a new root, and leaves at the extremity, and forming a new individual, by the decay of the connecting link, as in the strawberry.

SAP—is taken up by the tip of the roots, fibres, or spongelets, and carried into the interior of the plant, and although thin and clear at first, becomes thicker as it ascends in the plant.

SOWING—is the first operation of rearing; when seeds are deposited singly, in rows of beads, they are said to be planted. When dropt in numbers together, they are said to be sown. The operation of sowing is either performed in drills, patches, or broad cast. In broad cast sowing, the seed is scattered over a breadth of surface previously prepared by digging or otherwise, minutely pulverised. The seed is taken up in the hand and scattered regularly over the surface, so as to fall as equally as possible. A windy day is particularly to be avoided. Dry weather is also essentially necessary for sowing, more especially for covering in the seed.

SPURIOUS PEATY SOILS.—Lakes and pools of water are sometimes filled up by the accumulation of the remains of aquatic plants, and in this case a sort of spurious peat is formed. The fermentation in these cases seems to be of a different kind: much more gaseous matter is evolved, and the neighbourhood of morasses (or tanks) in which aquatic vegetables exist, is usually aguish and unhealthy, whilst that of true peat formed on soils originally dry is always salubrious.

Soils may generally be distinguished from mere masses of earth, from their friable texture, dark color, and by the presence of some vegetable fibre, or carbonaceous matter. The species of soil is always determined by the mixture of

matters, and never by the colour or texture of that mixture, which belongs to the nomenclature of varieties. Thus a clayey soil with sand, is a sandy clay—this is the name of the species : if the mass is yellow or red, it is a yellow or red sandy soil, which expresses at once the genus, species, and variety.

The true nourishment of plants is water and organic matter. Both these exist only in soils, and not in pure earth, but the earthy parts of the soil are useful in retaining water, so as to supply it in proper proportions to the roots of vegetables, and they are likewise efficacious in producing the proper distribution of the animal or vegetable matter. When equally mixed with it, they prevent it from decomposing too rapidly, and by these means the soluble parts are supplied in proper proportion.

The power of soils to absorb water from air is much connected with fertility. When this power is great, the plant is supplied with moisture in dry seasons, and the effect of evaporation in the day is counteracted by the absorption of aqueous vapour from the atmosphere by the interior parts of the soil during the day, and by both the exterior and interior during the night.

Suckers.—If you desire to get stocks, or plants, by this method, all that is necessary is, that the sucker, or young shoot which springs up from the root of the tree, should be carefully removed with a sufficiency of earth round it, so that the spongioles are in no way injured in the removal to the nursery bed or the spot where they are to remain.

Tendril—is the thread shape and generally spiral process issuing from the stem, branch, or petiole, and sometimes from the expansion of the leaf itself, being an organ by which plants of weak and climbing stems attach themselves to other plants or substances for support,—the tendril being much stronger than a branch of the same size.

Texture of Soils.—The perpendicular extent of roots are greatly influenced by the looseness or compactness of the soil. As for instance, carrots, beet, &c. All deep penetrating roots, when placed in a hard or stiff soil not easily divisible, are not only dwarfed, but split into branches, or twisted, as it may be. Since, then, the mere texture of the soil, independently of the food of plants which it contains, produces such effects, it must be of the greatest importance to attend to these circumstances.

Ticketing of Flowers.—"When a piece of zinc is rubbed bright with sand or brick dust, and written on with a black lead pencil, the writing in the course of a few hours becomes black and indelible, and will withstand all weathers. Pieces used once may be brightened by rubbing on brick or tile, and employed as often as is desired."—*Bombay Times.*

Transplanting.—If the object be to remove trees or shrubs, it is essentially necessary that the root fibres should be uninjured, and that a sufficiency of the soil attached to the roots be removed with them. If you are transplanting vegetables, such as beet, carrots, turnips, &c., the best method is to use a straight dibber, place the roots perpendicularly without bending the sap-root, and then gently replace the earth around it. It may perhaps be necessary, should the root fibres be

injured, to remove some of the leaves, otherwise the remaining fibres will not be able to nourish the plant.

When it is found impossible to preserve the root fibres from injury, or to replant them exactly in their former position, in order to diminish the loss of sap, the plants ought to be shaded from the light and sun, or a part of their leaves or branches cut off.

The removing of plants or trees depends solely upon circumstances; and the attention of the principal facts by gardeners to be remembered are, that all trees and plants derive their nourishment through the tips of the root fibres, and that the sap carried into the leaves passes off by exposure to light and sunshine; therefore the necessity of great care being used to preserve the mouths (or spongioles) entire.

Doctor Oake, M. D., of Southampton, states that it has been discovered that the best method of conveying plants to a distance is, by means of a wide-mouthed bottle, so covered up as to allow only a small aperture for the admission of air.

The exhalation of the plant being condensed beneath the roof or shoulder of the bottle, falls down, or rather distills again upon it, and constantly refreshes it with the results of its own evaporation; while it enjoys the rays of the sun through the transparency of the vessel in which it is confined.

In this way a primrose was conveyed to New Sydney from England.

TRANSPLANTING, OR LAYING DOWN TURF.—Turfing, as the operation is commonly called, consists in laying down turf on surfaces intended for lawns or borders. The turf is cut from a smooth firm part of a bank, or other ground free from coarse grass, in small patches about a foot square, and conveyed to the spot where it is to be used. The surface on which the turfs are to be laid ought previously to be dug or trenched, so as to be brought to one degree of consistency, and then rolled or beaten so that it may not afterwards sink. The turfs being laid so as to fit, are to be first beaten down individually, and then watered and rolled until the whole is smooth; and even then it will require being watered by the hand during the dry season at least once a day.

TRUNK—constitutes the principal bulk of a plant or tree.

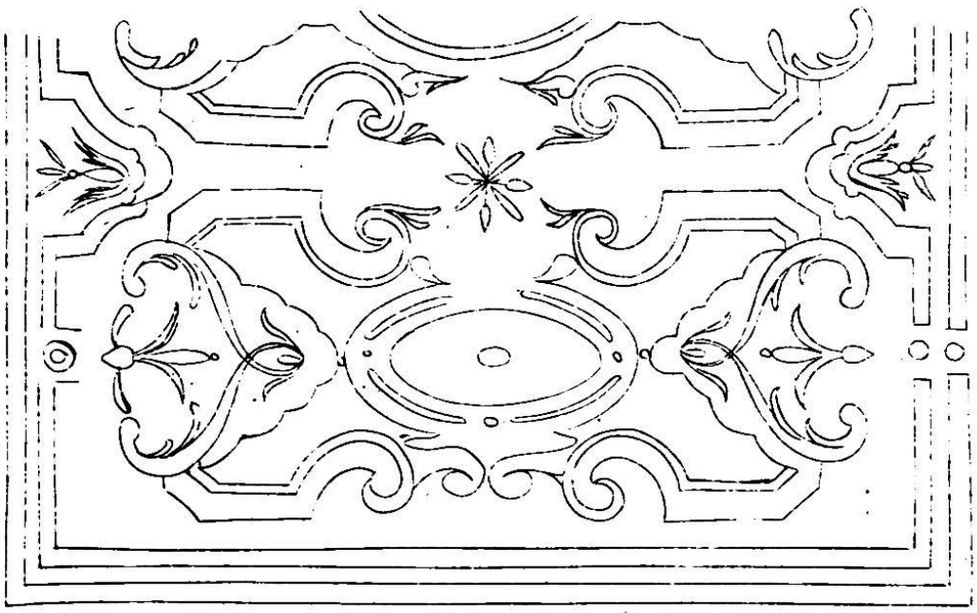
WATER.—Water is essentially necessary for the nourishment of plants, and although some will grow and throw out flowers, they never form seed without it.

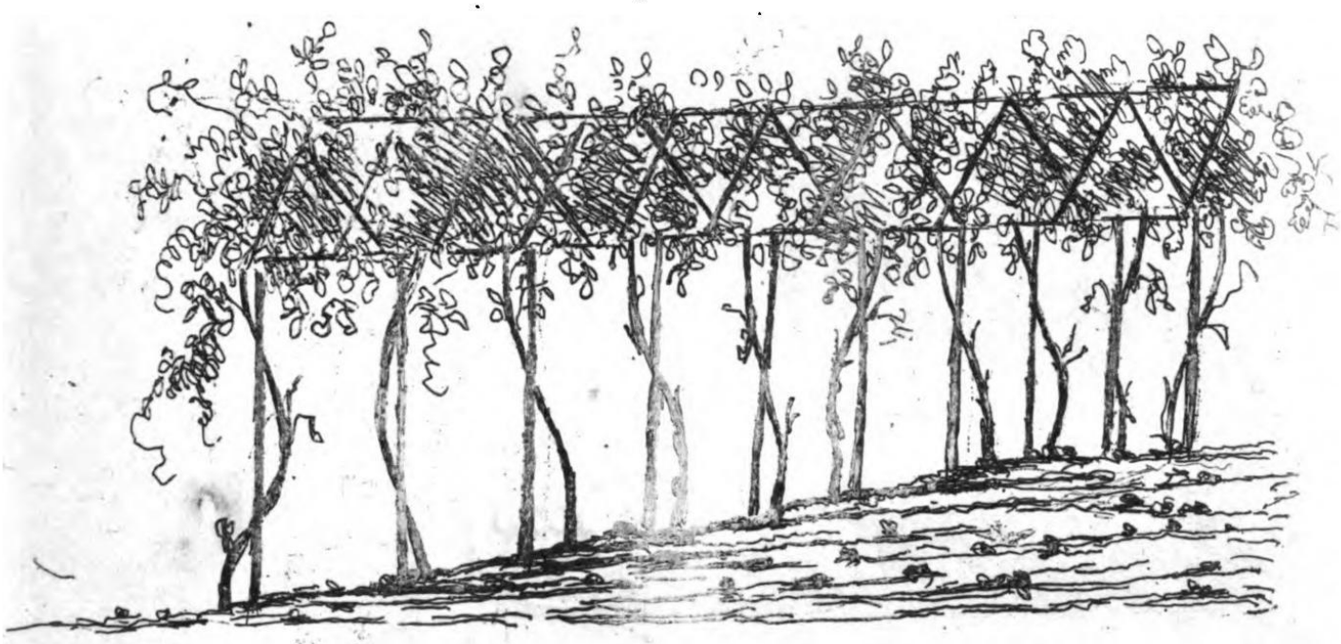
The material which water holds in solution forms the important part of nourishment, or otherwise causes the decay of plants. All water contains more or less atmospheric air, and water is more or less beneficial in proportion to the quantity mixed with it. Rain water, from its falling, collects a large proportion of air during its descent.

WATERING.—These rules should be invariably attended to—never to water the leaves, or lop off a plant, when the sun shines: watering therefore should be carried on in the morning, or evening, unless it be confined to watering the roots; in which case, transplanted plants and others in a growing state may be watered at any time, and if they are shaded from the sun, they may be watered over the tops.

WINTERING.—Trees are brought into bearing by this process, which consists

Parterre

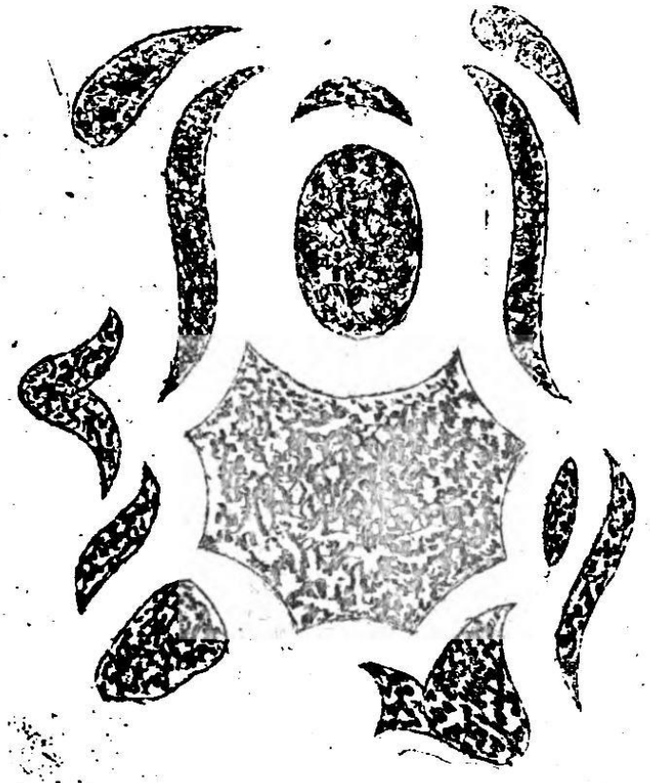


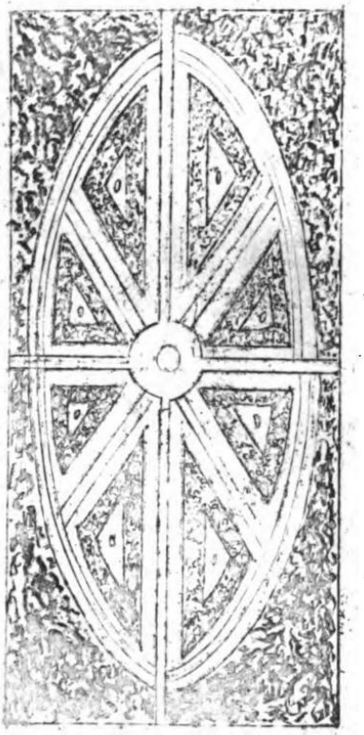


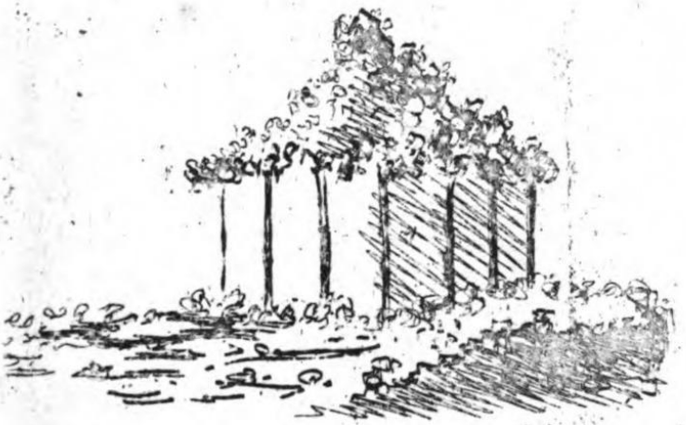
Trellis Vines

Vines as grown at Aurungabad
on the Pamyra Stem

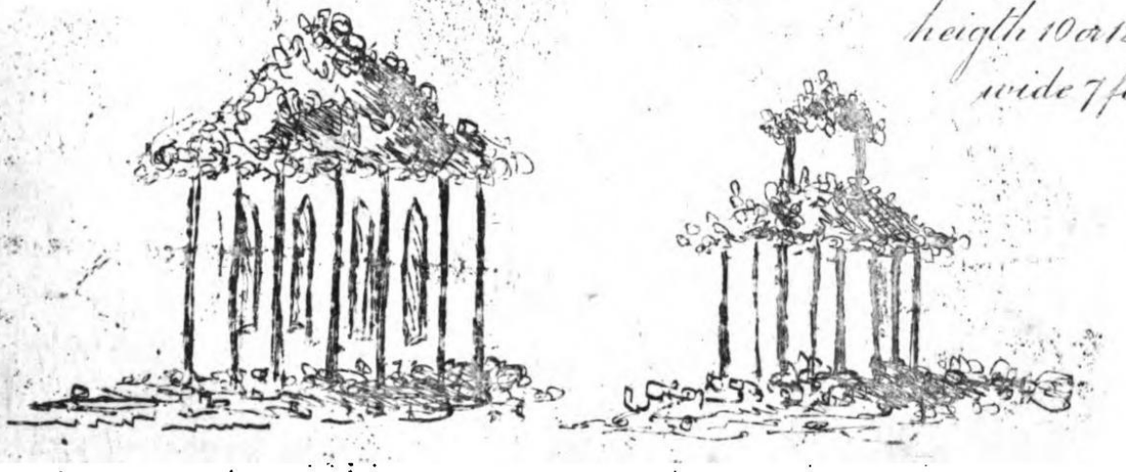
Parterres







Shed for
protection of plants.
height 10 or 12 feet.
wide 7 feet.



Garden Houses

in carefully removing the earth from the trunk roots and laying them open, and at the same time picking off all the leaves. The tree is left in this way without water for a certain period, and is thus brought into bearing by the nutrient matters and properties of the sap being thickened and thus stored up and afterwards thrown into the buds, the pulp, wood, root, and crown of the root. The check to the growth of trees by wintering, &c., is thus advantageous—causing the leaf pulp to become thickened by the loss of water and oxygen. When it returns to the stem and crown of the roots, it lays the basis of fresh branches terminating in flower buds. Whereas were a plant to remain unmoved in a rich soil well watered, it would probably send up more sap than the light could readily deprive of its water and oxygen, and thence would push out new leaves to carry off the superabundance; while there would be no pulp formed thick enough and containing enough of carbon to produce flowers.

WORMS—may either be destroyed by picking them up by hand very early in the morning or late in the evening in moist weather, or by watering by lime or salt and water.

WOUNDS IN TREES.—To heal wounds in trees,—make a varnish of common linseed oil rendered very dry, boiling it for the space of an hour with an ounce of litharge to each pound of oil, mixed with calcined bones (pulverized and sifted) to the consistence of almost a liquid paste. The wounds are to be covered by means of a brush, after the bark and other substance has been pared off so as to render the whole as smooth and even as possible. The varnish must be applied in dry weather, in order that it may attach itself properly.

FLORICULTURAL CATALOGUE,

ARRANGED IN ITS NATURAL ORDER AGREEABLE TO DE CANDOLE.

ORDER RANUNCULACEÆ.

Delphineum Roseum.—Lark Spur.
„ Purpureum.
„ Album.

ORDER NYMPHÆACEÆ.

Nymphæa Rubra.—Red Water Lily.
„ Pubesceus.—White ditto.

ORDER PAPAVERACEÆ.

Argemone Mexicana.—Yellow Poppy.

ORDER CRUCIFERÆ.

Mathiola Victoriæ.—Stock.
Various Species.
Iberis Odorata.—Candy Tuft.
„ Umbellata.
„ Major.
„ Alba.

ORDER RESEDACEÆ.

Reseda Odorata.—Mignionette.

ORDER CAPPARIDACEÆ.

Cleome Pantaphylla.—Great Cleome.

ORDER VIOLACEÆ.

Viola Tricolor.—Heart's Ease.
„ Odorata.—Sweet-scented Violet.

ORDER CARYOPHYLLACEÆ.

Dianthus Caryophyllus —Clove Pink.
„ Chinensis —Clove Chinese Pink.
„ Species.—Clove various do.

ORDER SINACEÆ.

Linum Trigynum.—Three-styled Flax.

ORDER MALVACEÆ.

Althæa Alba.—Hollyhock, white &c.
„ Rubella.
„ Purpurea.
„ Rosea.
„ Atrorubens.

ORDER GERANIACEÆ.

Geranium.

Pelargonium Capitatum.
„ Deep Scarlet.
„ Scarlet.
„ Quercifolium.
„ Crowfoot.
„ Graveolens.
„ Lemon-Scented.
„ Species.

ORDER TROPÆOLACEÆ.

Tropæolum Sulphureum.—Nastertium.
„ Atrosanguineum.—Dark-red do.

ORDER BALSAMINEÆ.

Balsamina Hortensis.
„ Carnea.
„ Rosea.
„ Coccinea.
„ Purpurea.
„ Punctata Nova.—Balsam.
„ Alba.
„ Nana Coccinea.
„ Violacea.
„ Striata Nova.

ORDER LEGUMINOSEÆ.

Lupinus Albus.—White Lupin.
„ Lutea.—Yellow ditto.
„ Stramineus.—Spreading do.
Agati Grandiflora.
„ Alba.
Ceratonia Siliqui.
Pueraria Odorata.

ORDER ROSACEÆ.

Rosa Duc de Berri. }
„ Damascena. |
„ Mycrophylla. |
„ Glandulifera. |
„ Rubiginosa. } Rose Tribe.
„ Multiflora. |
„ Indica. |
„ Edward. |
„ Blush. }
„ Fragrant (Mignionette.)
„ Scandens Sweet-Scented.

ORDER LOBELIACEÆ.

Lobelia Nicotianæfolia.—Lobelia.

ORDER JASMINACEÆ.

Jasminum Fruticans.
„ Grandiflorum.
„ Glaucum.—Jessamine.

Jasminum Sambar.
„ Undulatum.
Nyctanthes Arbortristis.—Arabian.

ORDER APOCYNACEÆ.

Tabernæmontana Coronaria.
„ Flore Pleno.
Vinea Rosea.—Madagascar Periwinkle.
„ Alba.
Hoya Carnosa.—Fleshy-leafed Hoya.

ORDER SOLONACEÆ—TRIBE 2ND.

Datura Alba.—Thorn Apple.
„ Fastuosa.
Petunia Grandiflora.
„ Alba.
„ Rosea.
„ Violacea.
„ Nyctaginiflora.
Brugmansia Suaveolens.

ORDER SCROPHULARINEÆ—TRIBE 1ST.

Antirrhinum Major.—Snap-dragon.
„ Formosum.
„ Coccineum.

ORDER LABIATÆ.

Salvia Officinales.
„ Coccinea.
„ Tenori.—Sage tribe.
„ Bicolor.
„ Species.

ORDER VERBENACEÆ.

Lantana Indica.—Verbenum.
„ Melissifolia.
„ Aculeata.
„ Nivea.
„ Mixta.
„ Fucuta.
Clerodendron Roseum.—Red Volkemaria.
„ Nutans.

ORDER ACANTHACEÆ.

Eranthemum Bicolor.
„ Pulchella.
„ Ruellia Species.
Strobilanthus Scabra.
„ Sabiniana.
„ Auriculata.
Thumbergia Grandiflora.—Beautiful Vine.
„ Alba.

Thumbergia Species.
Goldfussia Isophylla.—Gold Fussia.
„ Lancifolia.
„ Varieties.

ORDER PLUMBAGINEÆ.

Plumbago Capensis.—Lead Wort.
„ Rosea.
„ Zeylanica.

ORDER NYCTAGINEÆ.

Mirabilis Jalapa.—Marvel of Peru.
„ Rubra.
„ Striata.
„ Flava.
„ Alba.
„ Tricolor.
„ Purpurea.

ORDER CANNÆ.

Canna Indica.
„ Lutea. } Shot.
„ Species.

ORDER AMARANTHACEÆ.

Gomphrena Globosa.—Amaranth.
„ Alba.
„ Amaranthoides.
Celosia Gigantica.
Amaranthus Hypocondriacus.

ORDER IRIDACEÆ.

Ixia Maculata.—Iris Lily tribe.
„ Species.
„ Flava.

ORDER AMARYLLIDACEÆ.

Amaryllis Revoluta —Fritillary.
Brunsvigia Multiflora.
„ Falcata.
„ Curvifolia.
Vallota Purpurea.
Crinum Superbum.—Narcissus.
„ Asiaticum.
„ Species.

ORDER GRANATEÆ.

Punica, double flowering.—Pomegranate.

ORDER COMBRETACEÆ.

Quisqualis Indica.

ORDER PASSIFLOREÆ.

Passiflora Kermesina.
„ Muruenja.
„ Nitida.
„ Middletonia.
„ Serratifolia.
„ Cærulia.
„ Fœtida.
„ Minima.
„ Laurifolia.
„ Species.
„ Incarnata.
} Passion Flower tribe.

ORDER CRASSULACEÆ.

Bryophyllum Calycinum.

ORDER FICOIDEÆ.

Mesembryanthemum Chrystallinum.—Marygold.

ORDER CACTACEÆ.

Cereus Grandiflorus.—Night-blowing Cereus.
„ Gracilis.
„ Hybridus.
„ Philloides.
„ Species.
Pereskia Bleo.—White Cactus.

ORDER ARABIACEÆ.

Panaæ Cochleatum.
„ Species.

ORDER RUBIACEÆ—SECTION 2ND.

Pavetta Indica.
Ixora Banducha.
„ Coccinea.
„ Stricta.
„ Parviflora.

SECTION 3RD.

Gardenia Florida.—Cape Jessamine.
„ Species.
Mussanda Speciosa.

ORDER VALERIANEÆ.

Centranthus Angustifolia.—Valerian.

ORDER DIPSACEÆ.

Scabiosa Stellata.—Scabius.
„ Atropurpurea.
„ Species.

ORDER COMPOSITÆ.

Artemisia Pontica.—Wormwood.
„ Abrotanum.—Southern do.

Aster Sinensis.
„ Fistulosus.
„ Cæruleo Albus.
„ Roseus.
„ Striatus.
„ Species.
„ Atrorubens.
} Aster Tribe.

Calliopsis Grandiflora.
„ Bicolor.
„ Atrosanguinia.—Calliopsis.
„ Nigra.
„ Semiplena.

Terminatia Alata.
„ Citiona.

Helianthus Annuus.—Sun Flower.

Zinnia Elegans.
„ Alba.
„ Atrococcinea.
„ Atropurpurea.
„ Coccinea.
„ Crocea.
„ Kermesina.
„ Lutea.
} Zinnia.

Cacalia Sempervirens.

Chrysanthemum Alba.—Christmas flower.
„ Lutea.—Christmas flower.
„ Purpurea.

Dahlia, double white.
„ Double red.
„ Fine double.—Dahlia.
„ Mexican.

Tagetes Patula.
„ Humulis.
„ Grandis.
„ Erecta.—Marygold.
„ Humilis Nova.
„ Citrina.
„ Aurantica.

Hæmanthus Coccineus.

Nerine Sarniensis.

ORDER HEMEROCALLIDEÆ.

Polianthes Flore pleno.—Lily tribe.
„ Pink.
„ Species.
„ Tuberosa.

Aloe Littoralis.—Aloe.

FLORICULTURAL INDEX.

Marygold
Mignionette
Monkey Flower
Monk's Hood
Moon Flower
Narcissus
Nasturtium
Naval Wort
Night Blowing Ceres
Nymphæa Stellata
„ Rubra
„ Pubescens
„ Esculenta
Oxalis Sensitiva
„ Corniculata
Pansy
Passion Flower
Peas, sweet
„ everlasting
Persicaria, dwarf
„ red
„ white
Pheasant's Eye
Pimpernel, Flax-leaved
Periwinkle
Pink
Plumbago
Poppy
Poppy, yellow
Primrose
Prince's Feather
Quaking Grass
Red Ænotheria
Rocket
Rose Campion
Rose
Russalis
Scabius
Scarlet Collomea
Sun Flower
Sun Dew
Sensitive Plant
Shot, red
„ white
Slipper Wort
Snap Dragon
Southern Wood
Speed Well
Star Wort
Starry Marygold
Stock
Strawberry Pear
„ Spinage
Stramonium
Sweet Sultan
Sweet Brier
„ William
Scholtzia
Salvia
Sweet Pea
Safflower
Scabiosa
Tassel Flower
Traveller's Joy
Trumpet Flower
Tube Rose
Tulip
Venus' Looking Glass
Verbena
Veronica, blue
„ variegated
Valerian
Violet
Verbesina
Wall Flower
Water Lily
Wax Plant
Zinnia

FLORICULTURAL LIST.

ADAM'S NEEDLE, OR YUCCA GLORIOSA.—The leaves of this plant resemble in their appearance the Aloe. It grows to the height of six or eight feet, flowering in the rains with a large drooping panicle of a pyramidal shape, sometimes full three feet long, covered with white blossoms.

Propagation.—By suckers thrown out from the stem, which only require removal.

AFRICAN LILLY. AGAPANTHUS UMBILATUS.—This is a beautiful blue Lilly brought from the Cape, and requires the same treatment as the other species.

Propagation.—By dividing the roots.

Soil.—A light peat sandy soil, mixed with old vegetable manure.

AMARANTH—*a tricolor, Caudatus, or Love lies bleeding, a-Hypochondriachus or Prince's Feather.*—This flower is found wild in the south of England, and derives its name from A, not, and Mairaino, to fade;—barren and fertile flowers in the same cluster.

The cultivated species are very common, and of a great variety of colors, grown in every garden. Amaranthus Caudatus is a small pretty pink flower, and the a-Hypochondriachus is another variety introduced from America, with long hanging red flowers.

Propagation.—By seed only.

Soil.—A good loam with old manure, and watered once a day, is all that is necessary. The leaves and stalks of several of the species are eaten, and resemble spinage.

AMARYLLIS FRITILLARY, OR SNAKES' HEAD.—From Amarysso, resplendent. The wild flower hangs pendulous, and is chequered with pale dark purple —name from Fritillas, a dice board. Most of the species are natives of China, the Cape of Good Hope, and America, and have become quite acclimated in India, and found almost in every flower-garden under the names of Mexican, Barbadoes, Turk's cap, Tiger lilly, Parrot, &c.

Propagation—is by the offsets of the bulb, which in one year will produce from three to a dozen fresh plants.

Soil.—A good rich old vegetable soil: if the subsoil is rather porous, the better. When grown in pots, be careful that there is a small hole in the bottom, and that the pots are of a sufficient size to admit the expansion freely of the bulbs, which, after the decay of the flowering old stalk, may be separated and transplanted: if in borders, they will blossom during the rains and cold weather, and many during the hot season.

AMARYLLIS—A. BELLADONA—A. EQUESTRIS—A. MEXICAN—A. CAPE—A. AMERICAN—A. ASIATICUM.—All these blossom during the rainy and cold season, and form a great ornament when judiciously planted amongst other border flowers. The colors are of every variety—red, white, pink, &c. The large flowering sorts are greedily devoured by birds and insects, and require much care to prevent their being destroyed.

Propagation.—As all other kinds of bulbous roots.

ANEMONE, OR PASQUI FLOWER, *a-Coronaria, a-Hortensis.*—Named from Anemos the wind. There are the wild and cultivated. The wood Anemone is a very elegant little flower, and only opens, it is said, when the wind blows : the blossoms are of a very short duration. The color is rather of a bluish purple, hanging like a bell with from five to fifteen petals. It grows in elevated open pastures in England.

The cultivated Anemone are of two species, a-Coronaria or Poppy Anemone, and a-Hortensis, or star-leafed Anemone. The varieties are the single and semi-double, both nearly as much esteemed as the double.

Propagation.—By seed for varieties, when the tubers are not procurable. They are successfully cultivated at the Cape ; and tubers can be procured from thence : the tubers may be divided.

Soil.—A strong rich loamy soil, at least a foot and a half in depth, and well mixed with old decayed vegetable manure, so that it may retain a moderate share of moisture. If not grown in beds, they must be in pots of a large size, and this will no doubt be found the best method of culture, enabling you to take advantage of situation or other circumstances as may be desirable.

Culture.—The plants should occasionally have the earth loosened around the roots, and the stems earthed up, taking care that the crowns of the tubers are never exposed, otherwise they will be seriously injured ; they should be grown or kept only in such spots as may benefit by the morning and evening sun. In the selection of roots, choose those of a moderate size and form, without any hollow in the centre : when fresh, the roots are exceedingly brittle.

ASTER CHINENSIS.—Named from Aster, a star : is mostly of every variety of color. Some beautiful additions have been made from Germany : they are striped and of a larger size than the Chinese : the colors are, deep red striped, pale red, pale red tipped with white, dark blue, dark blue striped, pale blue, pale blue striped, yellow tinged, white, silver white, flesh colored, grey, &c.

Propagation.—By seed sown at the end of the hot weather, and continued during the rains.

Culture.—The plants should have at least eighteen inches of space between them, and the soil rich and light. If grown in pots, the varieties are easily kept distinct, and the seed preserved as soon as the plant withers and dries. A succession of flowers may be continued until the hot season.

BALM OF GILEAD.—The seed may be sown at the commencement of the rains or during the cold season. The scent lies only in the leaves, and the plant seldom exceeds eighteen inches in length.

Bell Flower, Blue and White.—This is an annual, possessing no very great beauty. It is found in the dry rocky bed of the Yena river above the falls of Mahabuleshwur. Flowers in April and May. It is a rare plant, of which there are several varieties.

Beautiful Vine.—The winged Thumbergia. This creeper is very tender. There are several species—the White, Fragrans, Orange Flowered, &c. It is common in gardens, and flowers in the rains. The Thumbergia Grandiflora is a perennial twining plant, with opposite cordate leaves; flowers large, of a beautiful light blue colour. It makes an excellent covering for trellis work. The colour of the flowers varies to a pure white. The capsule size of a pea, flat and beaked.

Balsam. Impatiens Balsaminæ.—So named because the ripe capsules, on being touched, fly open and scatter their seeds. A native of India. The double flowered are most prized. The colors are rose, pink, white, blue, and variegated. When the true color of the plant from seed can be depended upon, if sown in large beds, or patches, they have a pretty effect in full blossom, and may of course be arranged according to the taste of the cultivator.

Propagation.—By seed at the commencement of the rains, in small beds, and then transplanted. After the first blossoms are off they may be cut down, and will throw out fresh shoots, but will not blossom so fine as the first.

Soil.—A rich light loamy soil, with old decayed stable manure. No plant should ever be closer than one foot, especially if the soil is rich, and all lower superfluous leaves and stalks removed from the stems. They thrive well in pots, and during the time they are in blossom look very ornamental placed amongst evergreens.

Batchelor's Button.—Globe Amaranth. Annual: common in most gardens. The native women wear the flowers in their hair. It resembles red colour. Native name—Jafferee Goondee.

Balm, Blue.—Resembles the Balm of Gilead in appearance, but has this difference—the scent lies in the flowers only. The same is the case with the white blossoming.

Blue Ledum.—Blue Rosemary. Cultivated the same as Lavender.

Bladder Ketmia.—Hibiscus Trionum.

Browallia, Blue and White.—Both are calculated for borders. The white is an upright, and the blue a spreading, plant; both having a pretty and delicate appearance.

Button Flower.—A small club-shaped, yellow and brown-coloured flower. Grows easily from seed, and only requires common care.

Camomile.

Campion.—See Batchelor's Button.

Candy tuft. Iberis Sencifolia.—Grows wild in England: named Iberis from Iberia, or Spain.

This flower is very easily grown from seed; bears towards the close of the rains. It has little or no scent—the colors pink and white.

Propagation.—By seed sown in baskets or beds, and then transplanted.

Culture.—It grows about a foot and a half high, throwing out round balls of flowers at the extremities of the stem, and should be allowed at least eighteen inches of space between each plant. It will continue in blossom until the hot weather.

CARNATION. DIANTHUS CARYOPHYLLUS.—The Clove Pink or Carnation grows wild in various parts of England, and takes its name from Anthos, flower, and Dios, Jupiter. This has long been a favorite flower, and is now almost acclimated. It seldom ripens its seed, and two varieties are only to be met with in the Deccan. The dark crimson is not so full a flower as the variegated crimson and white; they both possess equal perfume and fragrance, but the latter, when carefully grown, is certainly the most beautiful. A full grown carnation should neither have its petals too crowded or too thin, but regularly disposed, so that all its beauties may be observed at once. The stem or foot stalk seldom exceeds eighteen inches, and these should be carefully supported.

Propagation.—By layers and pipings; also by seed when procurable.

Culture.—The plants must always be sheltered from heavy rains, and also the hot winds; yet kept in an airy situation. If placed under cover for any length of time, they run up to thin stalks, seldom throwing out blossoms. The time for taking cuttings is when the plant is in blossom; and this may be done either at the commencement of the rains, or the cold weather. When the plants appear to be about to blossom, all the buds save a couple should be carefully removed, as well as any small shoots on the foot stalk between the leaves. When layers are required, they must be removed from the stem with a knife or scissors, and should not be longer than two or three joints. Cut off all the lower superfluous leaves smooth, then throw the layers into water for a couple of hours. Plant them in baskets at about six inches apart, which have been filled with old rich vegetable loam; water so as to settle the earth round the stems, and place in a shady spot, not under trees, if in the rainy season. In about six weeks they will have struck, and may be removed into pots. Do this carefully, not disturbing the earth round the young roots, which are very tender, and replace in the shade again until sufficiently strong to bear exposure to the sun. The variegated have only two colors, and when striped are called Flakes, but if spotted, Picotees. Ants (black, red, and white) are very destructive to the roots.—Vide page 10.

An old plant of Flakes or Picotees, will occasionally lose both stripes and spots during the hot season, and become quite white when in flower, but have resumed during the rains their original colours of deep red and white. The colour thus changing may, I think, be very justly attributed to the dry hot weather, as it has been remarked in England that sometimes fine double running flowers have returned to their whole or original colour during very dry or warm summers.

CANTERBURY BELL.—The single Campanula Media, and the double C. varigater.

CARDINAL FLOWER.—Lobelia Radicans. An annual creeping glabrous plant a native of China. Flowers of a pink colour. In gardens it spreads over he soil, rooting at every branch, and is well adapted for borders to parterres.

CATCH FLY. LYCHNIS VICARIA.—This is a pretty light pink flower, named from Lychnos a lamp; with a small fine-celled capsule: blossoms after the rains.

Propagation.—By seed, which should be gathered before the capsules become quite dry. It thrives well in a light soil—may be sown during or after the rains.

CEREUS TRIANGULARIS.—See Strawberry Pear, or Torch Thistle.

„ TRUNCATUS.—A small, but very beautiful, plant, flowering during the cold season; of a red or rose color.

CLOVE PINK.—See Carnation.

CLITORIA TERNATEA.—There are several varieties. The most common is the blue and white. They blossom all the year round, and being a shrubby twining plant, are well suited for covering trellis work. It is of easy growth, and the flowers are used sometimes for coloring boiled rice.

Propagation and Culture.—By seed, and in any soil.

CLARKIA PULCHELLA.—Several varieties.

CLEMATIS, OR TRAVELLER'S JOY.—Grows wild; flowers after the rains.

CLINTONIA ELEGANS AND PULCHELLA.

CLEOME, GREAT FLOWERED.—This is common in most gardens. The flowers are whitish, on an erect stem—several varieties.

CHRYSANTHEMUM INDICUM. CHRISTMAS FLOWER. GOOL DOVODEE.—Common in England: name from Chrysos, gold, and Anthos, flower. There are several varieties—common in all gardens. They commence flowering generally in November, and continue for several months. The colors are mostly yellow, orange, and a purplish color mixed with white.

Propagation.—By seed, roots, and suckers, and grow well in any tolerably good soil.

COCK'S COMB. AMARANTHUS VULGARIS.—Cultivated in all gardens for the sake of its crested large flowers, which are both deep red and yellow.

Propagation.—By seed.

Culture.—Any soil will answer that is mixed with a proportionate quantity of manure. As the plant grows to two or three feet high, and is very showy, it should be placed out in borders. Watering every second or third day will suffice.

COLUMBINE. AQUILEGIA SYLVESTRIS.—A dark purple flower, erect stem from two to three feet high: grown from seed.

CONVOLVULUS. BIND WEED.—Named from Convolvo, to bind or entwine. This is a beautiful bell-shaped flower of every variety of color—dark blue, white, yellow, purple and red, buff, &c. It grows very fast, and is, during the time it lasts, well adapted for covering trellis work, and forming a screen. The flowers are in their highest beauty early of a morning, and are so delicate that they wither as soon as touched or picked.

Propagation.—By seed, and will grow in any soil.

COREOPSIS TINCTORIA.—There are several varieties of this elegant flower. The leaves have a strong scent of fennel. The colour of the flower is a deep orange

yellow striped with red. The seed may be sown at the commencement of the rains, or at any time after. It requires no particular care beyond other border flowers.

Cowslip. Primula Veris.—Not known to blossom: a small yellow flower on a tall upright stem.

Crown Imperial. Fritillaria.—There are three species which are considered florist flowers; of these species there are several varieties. The Persian Fritillary has a long round root—stem three or four feet high, with dark purple flowers forming a pyramid.

Cyprus Vine.—Crimson Quamoclit. Flowers in the cold weather, of a most beautiful bright crimson colour; tube long, slender; in gardens pretty common.

Daffodil.—Narcissus—pseudo-narcissus. Flowers yellow.

Dahlia or Georgina.—This flower is a native of Mexico, and there grows in a sandy soil. It was first introduced into England in the year 1789, and into India about 20 years ago. It is now very common in all parts, and, from its great diversity of color, is generally cultivated with much care, especially by Europeans. The leading varieties of the fertile rayed are—purple, rose, pale white, yellow, yellow and orange, pale yellow, light blue, dark red, &c. Flowers single.

Of the barren rayed species, there are the scarlet, bright scarlet, orange, saffron and yellow flowered, single, semi-double, and double, with several sub-varieties.

Propagation.—By dividing the roots and cuttings for ordinary purposes, and by seed for new varieties. If the tubers are cut, be careful to preserve an eye in the part, otherwise it will throw out root fibres but no shoots. If seed is to be preserved, remove all the tubers carefully, so that the nourishment may be given to the flower; and if to produce tubers for the following season, remove the flowers when early in bud, after having ascertained the color. The finest double species are grown in this manner, though you may occasionally get a double flower from seed. The method by which favorite sorts may be encreased is as follows. The old tubers are to be placed in a large flower pot of good leaf mould and old manure, leaving the crowns only exposed. The shoots which quickly rise from the tubers are cut or clipped off when about two or three inches in length, and put into fresh pots, or in a bed, where they must be carefully watered, and shaded until they have struck and taken root, when they will grow vigorously. Tubers that have no eyes near the crown should be rejected.

If grown from seed, the plants should be removed when about four or six inches high, and if placed in the ground, a space of two feet at least between each plant allowed; and as the plant arrives at maturity, it must be supported by strong sticks. When the stalk has become dry, the tubers may be removed and kept in a room, either upon sand or pounded charcoal. The plants should have all the lower straggling branches removed with a sharp knife, and so trained that, when in blossom, the flowers may appear to the greatest advantage.

Soil.—Should be a light rich loam, mixed with sand. The tubers may be left in the ground, but it is not safe to do so, rats and other vermin being destructive to them.

DAISY. BELLIS PERENNIS.—Not grown ; but a flower which blossoms about Christmas, and bears the name commonly. Is a species of Chrysanthemum.

DAMASK ROSE. ROSA DAMASCENA.—This dark-colored petal rose is very common, and is called by some the " Macartney," who, it is said, introduced it from the Isle of France.

Propagation.—By cuttings and layers : grows in any soil.

DANDELION, SCARLET COLORED. LEONOTIS LEONURIS.—A beautiful small scarlet flower, native of the Cape, and now common in all gardens; blossoms throughout the year, and is very difficult to get rid of when once sown : any soil seems to suit it.

DIANTHUS BARBATUS, OR FRINGED PINK.—This is of a crimson color, and may be grown by slips, and blossoms at all seasons.

Soil.—A good loamy vegetable soil is all that is requisite.

EVENING PRIMROSE. ŒNOTHERA MUTABILIS.—This is a very pretty single petalled white flower, blossoming only in the evening ; and towards morning turns to a pink, when it closes and withers. A fresh succession of flowers continues for many weeks, even during the hot season.

Propagation.—By seed, either in pots or beds. The seed may be sown in the rains—soil should be rich.

ESCHOLTZIA CROCEA.—This is a very beautiful little flower, of a deep yellow orange colour, very delicate. It blossoms only in the cold weather, and requires care in transplanting :—not more than one plant in a pot, which should be deep—the root being long, and tapering : grown from seed.

FIG MARYGOLD.—See Marygold.

FLAG, SWEET. ACORUS CALAMUS.—*Hind.* BUTCH.—Common in the muddy banks of rivers in England—name from A, without : and corion, the pupil of the eye. This is a common plant in many gardens. The flowers are small. The root has a strong aromatic smell—is used for medicinal purposes, and when dried and scattered about, no insect will go near it.

FLAME OF THE FOREST.—See Ixora.

FRAXINELLA.—Red and white.

FOX GLOVE.—This is a small plant, so called from the resemblance the flowers bear to the finger of a glove. An active medicine is obtained from the leaves. Very rare.

GERANIUM, OR CRANE'S BILL. PELARGONIUM, OR STORK'S BILL. ERODIUM, OR HERON'S BILL.—So named from Geranos, a Crane. They are mostly all from the Cape of Good Hope. Most of the flowers are devoid of odour, and those which are particularly so are the most beautiful, whereas those again whose petals are the least showy, diffuse towards the evening and during the night a most powerful perfume ; this is particularly the case with such as have white petals spotted with red. The almost innumerable varieties now produced in England have originated by hybridization, and to enumerate them all here is unnecessary. " The flowers of all the kinds are borne in umbels on a peduncle, which in the stemless kinds arises from the centre of the source of the leaves, and in the shrub-

by kinds from the axil of almost each of the upper leaves. The number of the flowers borne in an umbel is various in different kinds, and greatest in those of the horse-leafed group." The commonest sorts cultivated in gardens are the deep scarlet, light pink, and ivy-leafed. The latter has a strong perfume, and scents the fingers if only slightly touched.

Propagation.—The ordinary mode is by cuttings and seed. Almost all the varieties produce seed, which will immediately grow if sown, and should be transplanted as soon as two or three perfect leaves are formed. The cuttings grow most readily, and should be taken off at the joints when the wood is assuming a brown appearance, and beginning to ripen. The fibrous-rooted herbaceous sorts may be multiplied by dividing the roots. As all the species are rapid growers, they require pruning, and to be occasionally changed into fresh pots.

Soil.—They require a light rich soil of loam and old well rotted stable manure, or else leaf mould and sand: the cuttings when put down must be removed for a time to a shady spot, and the earth kept continually moist. I must particularly caution against cutting the plants during the rains, as the whole plant suffers by the ends of the shoots decaying; neither should they be exposed during the hot winds, especially the soft velvet-leafed varieties.

Gilea, Blue Tricolor —This is a very delicate plant, and requires much care at first, when removing: the seed may be sown at the close of the rains in a basket or pot, and the young plants removed when about two or three inches high. They thrive best in pots with a light soil.

Gilly Flower, or Wall Flower. Cheiranthus Cheiri.—Named from Chier, the hand, Anthos a flower. This flower derives its name from the circumstance of its growing wild on old walls and ruins in England. It is of a light yellow color, but, when cultivated in gardens, assumes a much richer and darker tint, mixed with brown. The double variety, of a yellow color, and striped with deep orange, is seldom known to blossom here. The name of Gilly Flower is also given to the stock and a species of pink carnation, these being the only flowers formerly cultivated by dames in their baronial castles.

Propagation.—By seed, during and after the rains: space of a foot and a half must be allowed each plant if in beds, as it grows nearly two feet high.

Globe Amaranth. Gomphrena Globosa.—See Amaranth.

Gloriosa Superba.—*Hind.* Buchnag.—From Gloriosus, Magnificent. This beautiful lilly is a creeper, and blossoms at the commencement of the rains: it is found in the beds of ravines and edges of rivers. The flowers are of a white, yellow, and orange color, the petals long and fringed. It lasts about eight days, undergoing various changes during that time. The root is a strong poison.

Globe Thistle. Echinops Echinatus.—Much like the common thistle; with white flowers in globular spinous heads.

Golden Flower.—See Chrysanthemum Indicum.

Guilder Rose. Hydrangia Hortensis.—From Hyder, water, and aggion, a vessel—in allusion to some of the species growing in water, and the resemblance the capsule bears to a cup. The flowers are of various shades of rose color.

Propagation.—May be effected either by cuttings or layers.

Soil.—The soil most desired by the hydrangea is a black earth, mixed with well rotted leaf mould, and a small portion of sand. It requires moisture, and a supply of water should be freely given to it.

HEART'S EASE, OR PANSY, VIOLA-TRICOLOR.—Name doubtful. The flowers of this species of violet vary much in size, and only the large sorts are odorous. The colors, as its name indicates, are mixed, being deep purple, yellow, and blue. It is not by any means common in India, although very easily raised.

Propagation.—By seed and cuttings. In England this flower has been brought to great perfection, and I believe from the latter mode of continual offsets —which may give it the odour it possesses. In this country I have not met with the scented flower, although it is to be found at the Neilgherry hills. The seed should be taken as soon as the capsules appear round and full—they will dry in the house, and the seed falls out. If left on the plant, they open of themselves, and fresh plants spring up.

Soil.—A light loamy vegetable soil.

HELIOTROPIUM INDICUM.—A shrubby plant with lilac-colored flowers.

HELIOTROPE, WHITE. INDICUM HELIOTROPIUM.—*Hind.* SUREEAREE. HELIOTROPIUM PERUVIANUM, AND H. AMERICAN.—So named from Helios, the sun, and Trope, a twining. All these different species seem now pretty well acclimated. The Indicum flowers at all seasons, and the American, which is of a dark orange mixed with yellow, also a pale blue or lilac, may be found in most gardens. The leaves have the scent of black currants. The English Heliotrope grows equally well by cuttings, and has the scent of a cherry pie.

Propagation.—By layers and cuttings.

Culture.—A tolerable good soil, with occasional watering, is all that is required —the bush must be pruned occasionally.

HIBISCUS	Speciosus,	Superb	Hibiscus.
„	Palustris,	Marshy	do.
„	Vitifolius,	Vine Leaved	do.
„	Furcatus,	Fork Calyxed	do.
„	Surattensis,	Prickly Stalked	do.
„	Trionum,	Bladder Kitmia	do.

HOLLY HOCK. ALTHEA ROSEA. *Hind.* KHÆRA.—Common in all gardens—name from Altho, to cure. This plant is of the Mallow tribe, and highly ornamental; it will with little care blossom throughout the whole year. The double flowered varieties are most esteemed: the colors are as numerous as the Dahlia. As they grow in a good soil to the height of ten feet, they are best adapted for shutting out blank walls, or to be placed in the hinder borders of a walk.

Propagation.—By seed and cuttings, either from the flower stalks or root shoots. Almost any soil will do for this plant, neither does it seem to require much water. The lower branches should be neatly trimmed off, and the plants supported when large with strong sticks: two feet is the least space to be allowed for a plant.

HONEY SUCKLE, OR WOODBINE. LONICERA PERICLYMINEUM. LONICERA SEMPERVIRENS, OR TRUMPET HONEY SUCKLE. LONICERA CHINENSIS.—Lo-

nicera, named after Adam Loniceir, a German botanist. Common all over England. Grows in hedges, thickets, and clefts of rocks; flower yellow, or white with deep red streaks, and remarkable for its odour.

Lonicera Sempervirens, a native of North America, with flowers, scarlet outside and yellowish white within—very useful in covering walls: the scent at night is unpleasant to some persons, being sickly. Lonicera Chinensis is common in some gardens of the Deccan.

Propagation.—By slips and layers. Soil, any good garden soil.

HYACINTH.—Hyacinthus Orientalis. Nat. Sumbul.

HYDRANGIA.—See Guilder Rose.

ICE PLANT. MESEMBRY ANTHEMUM CRYSTALLINUM.—Name from Mesembria, Midday, the time at which the flowers are said to expand; but in India this is not the case—the flowers are continually open: color of a greyish brown, and star-shaped. The leaves are covered with a concrete gummy substance, having an icy appearance. It blossoms generally after the rains.

Propagation.—By seed, which may be saved in great abundance, and should not be sown until after the rains. It is very delicate at first, but when planted out, and if shaded and protected, will thrive well. They grow best singly in pots.

Soil.—Should be light, and moderately mixed with old manure.

INDIAN PINK. DIANTHUS CHINENSIS.—Common in all gardens—of various colors, and some mixed—they flower all the year round, and give seed immediately as it fades, and which will spring up again if sown. The double flowered varieties are much esteemed: the colors are white, red, crimson, red and white.

IPOMÆA. BIND WEED.—So called in allusion to the habit of the plant.—See Convolvulaceæ.

IRIS PERSICA, FLOWER DE LUCE, YELLOW—I: CHINENSIS OR INDICA, PALE BLUE—I: TIGRIDIA, SPOTTED—I: PAVONIA, SPOTTED OR TIGER—I: NORTHIANA, A DEEP RED—FLORENTINA.—Iris, named after the rainbow. All these species of Flag are very beautiful, and flower generally after the rains, and during the cold season.

Propagation.—By dividing the root.

Soil.—Any good garden soil, and moist shady situation.

IXORA COCCINEA. FLAME OF THE FOREST.—A pretty shrub with scarlet flowers, found in many gardens, but brought from the jungles—common.

IXORA BANDHUCA, OR JUNGLE GERANIUM. *Hind.* BUCKOLEE.—A spreading shrub, smaller than the Coccinea, but equally common: in flower almost during the whole year—of a pale crimson color: there is also a white variety:—blossoms during the rains.

IXIA CHINENSIS AND GLADIOLI.—A native from the Cape, of which there are several genera, and is common in most gardens: it thrives well in a good soil, and requires no particular attention.

Propagation.—By offsets.

JACOBIA.—Double Red. Senecio Rosea.
„ Double White. „ Alba.

JASMINE, WHITE AND YELLOW.—Both species are common everywhere: the white is the highest scented, and used in garlands by the natives.

JASAMINUM ODORATISSIMUM.—The yellow Jasmine: an elegant shrub, with small shining leaves, flowers bearing a slightly sweet scent—a native of Madeira, and introduced.

JASMINE OFFICINALE.—Common white, with a much more powerful scent: used generally for covering trellis work by Europeans. The natives grow it in bushes, and use the flowers at most of their festivals.

Propagation.—By layers: the plant does not require any particular care, further than watering.

JASMINE GRANDIFLORUM. *Hind.* CHUMBALEE, OR IATEE IAI.—This species is very much prized by the natives: the large white flowers having a most powerful scent, and being in blossom throughout the year, are used as garlands on all festive occasions.

Propagated and grown as the former.

JALAP PLANT. MIRABILIS JALAPPA. *Hind.* GOOL BAJEE OR ABBAS.—This plant is very common, and known as the Marvel of Peru: common. The flowers are of various colors, red, white, and yellow, also variegated red and white, yellow and white. The root when dried is prepared for medicinal use. It becomes in a short time quite a weed in the garden.

Propagation.—By seed, and in any soil.

KAULFUSSIA AMELLOIDES, OR KITE FLOWER.—This plant is a native of the Cape, bears a very pretty blue flower during the cold season, and thrives in any good garden soil.

LARK SPUR. DELPHINUM AJACIS.—This is grown very common in flower gardens by the natives after the rains—color a deep blue on a spiral stem: the flower has a resemblance to the Dolphin, and takes its name from it. There are several other species: the natives are in the habit of growing it under peach and orange trees for the purpose of keeping down weeds.

Propagation.—By seed, and generally grown in beds; the space allowed six inches between each plant, and when in flower has a pretty appearance. A good garden soil is all that is requisite.

LAVENDER. LAVANDULÆ.—This plant never blossoms in the Deccan, as far as I can discover, but grows to great perfection on the Neilgherry hills. The bush here has a strong aromatic scent, but seldom survives more than two years.

Propagation.—By cuttings and layers, in a good rich soil—it grows best in pots.

LEAD WORT.—See Plumbago.

LILLY. LILLIUM.—Of these beautiful flowers there are innumerable species introduced from all parts. The white, orange, red, pink, Turk's cap, &c. They may be grown in pots, but are much more adapted for borders.

Propagation.—By offsets, bulbs, or when done flowering. Any good soil suits the plant.

LOBELIA SIMPLEX.—This is a very pretty border flower—color blue : introduced from the Cape.

Propagation.—By seed.

LOBELIA SPLENDENS—L. PYRAMIDALIS, PURPLE COLOR.—This is a beautiful scarlet flower, and found in many gardens; it blossoms during the rains : there are several varieties.

Propagation.—By offsets and seeds.

Soil.—Should be light, and formed of old decayed leaves, &c., continually kept moist.

LOTUS.—See Water Lilly.

LOVE LIES BLEEDING.—See Amaranthus.

LUPIN—LUPINUS.—These flowers blossom during the latter end of the cold season, and should never be sown until the rains are over. Some of the species are very delicate, but the small blue, white lupin, rose lupin, and Egyptian, flower freely. Some of the species are very common in Egypt, and grown for food, the seed being ground into flour.

Propagation.—By seed, and should be sown in pots ; and if in beds, about one foot apart.

LYCHNIS.—There are three sorts—scarlet, white, and fulgens. The first is an extremely showy flower, and ornamental either in a border or pot. It seldom exceeds eighteen inches in height, and after flowering, if cut down, will shoot out and blossom again. The seed should be sown either in or after the rains,—moderate care is all that is necessary.

MALLOW.—An annual erect-growing plant, with deep purple flowers : common in gardens.

MALLOW TREE.—Lavatera Arborea. Introduced from Europe.

MARSH MALLOW. ALTHEA.—*Hind.* JUNGLY KAPAS.—This plant grows wild, bearing a dark yellow flower. The leaves and roots are used for Medicinal purposes.

MARVEL OF PERU.—See Jalap.

MARY GOLD. CALENDULA OFFICINALIS.—Common in every garden. Is of a deep yellow color, and requires no description. Will grow from seed at all seasons. There are many varieties, such as the African, &c.

MIGNIONETTE. RESEDA ODORATA.—This sweet-scented little plant may be cultivated throughout the year, only requiring moderate care in watering ; and when the blossoms have passed their maturity, cut down the shoots, when fresh ones will spring up. If you require the seed, observe, as soon as the capsules are full, to pick off the branches and let them dry ; otherwise if let remain on the plant, they drop out and are lost.

Propagation.—By seed, either in pots or beds; each plant should be about from four to five inches apart.

MONKEY FLOWER.

MONK'S HOOD.—Aconitum.

MOON FLOWER. CHRYSANTHIMUM INDICUM.—*Hind.* GOOL DAVODEE.

—The Christmas Flower is common all over the Deccan. There are several varieties—yellow, purple, blue, and white: they form rather a pretty edging to a border.

Propagation.—By seed and offsets.

NARCISSUS ORIENTALIS. *Hind.* NARJIS.—This plant is very easily cultivated in the same sort of soil as for other bulbs; it bears a yellow flower after the rains.

Propagation.—By dividing the tubers, and is best cultivated in pots.

NASTURTIUM TROPÆOLUM. MAJUS AND MINUS.—This flower is very common—the colors are yellow, light yellow, and deep orange; and as the plant is a creeper, it is well adapted for trellis work. The leaves are eaten with sallad, and the seed when green sometimes pickled.

Propagation.—By slips, and seed, in any good soil.

NIGHT BLOWING CERES. CEREUS GRANDIFLORIS.—This is a climbing plant —stems rooting—five or six angled—a native of the West Indies. The flowers are showy and sweet-scented.

Propagation.—By cuttings and layers.

NYMPHEA STELLATA.—This plant is common in ponds and tanks. The flowers are blue.

NYMPHEA RUBRA. *Hind.* KUMMUL.—Red flowering lotus. In tanks, flowers about the close of the rains—of a dark crimson color.

NYMPHEA PUBESCENS. *Hind.* KOEE KUMMUL.—A variety of the last, bears a white flower.

NYMPHEA ESCULENTA.—This species has a tuberous root, which is eaten and held in esteem by the Natives.

OXALIS SENSITIVA.—A small annual, almost stemless plant; common on pasture-grounds during the rains.

OXALIS CORNICULATA.—In gardens and pasture-grounds during the rains. It bears a considerable resemblance to the English Wood Sorell.

PANSY, OR VIOLA TRICOLOR.—See Heart's Ease.

PASSION FLOWER. PASSIFLORA LAURIFOLIA.—There are several species of this plant (the most common is the one here described: it is known from its dark shining leaves—bears flowers twice in the year.) So named from the supposed resemblance between the flowers and a crown of thorns. There are several wild varieties—one bears a large fruit the size and color of an orange. In New South Wales, one species bears a fruit commonly eaten with sugar and wine.

Propagation.—By layers.

PEAS, EVERLASTING.

PERSICARIA, DWARF. Polygonum.

PERSICARIA, RED. „ Orientale.

PERSICARIA, WHITE. „ Albus.

PHEASANT'S EYE. AMARANTHUS CAUDATUS.—A small pink flower, annual. Common but ornamental.

Propagation.—By seed.

PERIWINKLE.—The pink and white varieties are common in India.

PIMPERNEL.—Annual flowers of a rich deep blue with a crimson centre. Anthers slightly hairy, segments of the calyx oval shaped, adhering closely to the seed vessel.

PIMPERNEL, FLAX-LEAVED.—A small plant with a blue flower, introduced from Europe and grown from seed.

PINK.—See Dianthus.

PLUMBAGO—LEAD WORT. WHITE P. ZEYLANICA—RED P. ROSEA—BLUE P. CAPENSIS.—The White Plumbago is common; so are the other varieties. The red and blue blossom throughout the year; but the latter, which is the handsomest of the whole, and introduced from the Cape, is by far the most esteemed.

Propagation.—By layers.

POPPY, DOUBLE. PAPAVERIS SOMNIFERUM.—This species, which is almost always variegated, is sown only as a border flower, for its large and full handsome appearance. The scent is anything but agreeable. The seed should be sown where the plants are to remain, and six inches the least space allowed between each plant. They do not bear transplanting. The common single variety, from the capsule of which Opium is procured, is of various colours, and when sown in beds, has a very pleasing effect. The seed (kus kus) is usually used by natives in confectionery, having the taste of sweet almonds.

Propagation.—By seed only.

POPPY, YELLOW. ARGEMONA MEXICANA.—Common Yellow Thistle. The seeds yield an oil used for common purposes, and the fresh root bruised and applied to the part stung by a scorpion affords relief.

PRIMROSE. PRIMULA VULGARIS.—This plant I have never known to blossom in the Deccan.

PRINCE'S FEATHER. AMARANTHUS TRISTIS.—This species of Amaranth is very common, and found in all the gardens. It is of a dark red color.

QUAKING GRASS.—Grown from seed only.

RED ŒNOTHERA.—The evening primrose.

ROCKET. DELPHINUM AJACIS.—A species of Larkspur with pink flowers. D. Neapolitanum, with variegated blossom. D. Ochroleucrum, white flowers. D. Grandiflorum, with deep blue flowers.

ROSE CAMPION.

ROSE, WHITE AND RED PERSIAN, R. CHINA, R. DAMASCUS, R. DAMASCENA, R. BRAMBLE FLOWERED, R. MULTIFLORA, R. WHITE FLOWERED, R. GLANDULIFERA, R. EDWARDS.—This favorite plant, bearing such a variety of colored flowers—from the deep red to the pale yellow and white, with all their intermediate shades—needs little description here, further than to point out the easiest mode of propagation, which is by layers at almost all seasons, or by cuttings at the commencement of the rains. The Persian varieties require to have their roots opened, and the plants cut during the early part of the cold season, after which they must be watered well every second or third day. The roots must then be covered up with manure, when they will throw out flowers, which are

generally used for rose water. The Rose Edwards, which blossoms all the year round, requires pruning about a month after it ceases to blossom, and should be allowed to rest a short time without watering, when a fresh supply of water and manure round the roots will cause it to bear flowering shoots immediately. This rose and the Egyptian are amongst the few that give seed—hips being perfectly formed on both.

Russalis. Sundew.—This plant bears a deep scarlet trumpet-shaped flower, hanging in long axillary peduncles down the stalk : it blossoms during the greater part of the year, and is highly ornamental, growing luxuriantly in a rich soil. It is propagated by layers or cuttings.

Scabius.—Grown from seed like other border flowers.

Scarlet Collomea.

Sun Flower. Helianthus Annuus.—*Hind.* Soruj Mukhee.—This flower is common all over India ; some growing to a very large size, whilst others again are small, with flowers springing from the axilla of each leaf. The blue Sun-flower has only the seeds of a dark color; many persons have been deceived by the name, supposing the color to be blue.

Sun Dew.—See Russalis.

Sensitive Plant. Mimosa Sensitiva.—Common everywhere. It creeps along the ground, bears a small pink flower, and the moment the leaves are touched, close on each other immediately.

Shot, Red. }
Shot, White. } Red and white Flag.

Slipper Wort.—This plant grows from two to three feet high, and is adapted for a border flower.

Snap Dragon. Antherhinum Majus, and Orontium.—Scarce, and only grown from seed; flowers yellow and white : blossoms during the cold season, and requires good garden soil.

Southern Wood. Artemesia Paniculata.—Common in all gardens : grows easily from cuttings, and if left for any length of time, the branches droop and take root immediately. It has a very strong aromatic scent, and is generally called Old Man in England.

Speed Well. Veronica Officinalis.—A single blue flower, found in most gardens.

Star Wort.—See Aster.

Starry Marygold.—See Marygold.

Stock, Ten Weeks. Mathiola Annua.—So named from flowering in about ten weeks after being sown. The colors are various—dark purple, white, red, carmine, &c. The double flowering Stock is rare, though out of a number of plants you may succeed in obtaining one or two. The Stock has been so much improved from cultivation, that various names are now assigned to it where the finest flowers or a variety has been produced—such as the Brompton Stock, the Virginia Stock, &c. This flower was formerly called the Castle Gilly-flower.

Strawberry Pear, or Triangular Torch Thistle. Cereus Trian-

GULARIS.—A creeping plant, with triangular stems, sending forth roots, and adheres to walls or any other support. It bears a very large showy yellowish white flower, which only opens during the night. There is another variety of a deep red-colored flower.

Propagation.—By slips and layers.

STRAWBERRY SPINAGE.

STRAMONIUM. THORN APPLE.—This is a common plant, growing in most parts of India. There are several species, the black and white. It possesses strong narcotic properties. It is in flower and fruit all the year.

SWEET SULTAN. CENTAUREA MOSCHATA.—*Hind.* SHAH PUSUND.—This is a fragrant and delicate light blue flower, and is one of the most beautiful of the Centaureas. It blossoms during and after the rains, and may be grown either in beds or pots.

SWEET BRIER, EGLANTINE. ROSA RUBIGINOSA. *Hind.* GUL NUSREEN.—This species of Rose, which was once scarce in the Deccan, is now to be found almost in every garden. I have seen it blossom. The general mode of propagation is by layers, but a much quicker and surer method is by budding it on the stalk of a rose.

SWEET WILLIAM. DIANTHUS BARBATUS. *Hind.* KURUNPHOOL.—This, like all the other varieties of Pink, may be cultivated in the same manner. Seed should be sown in the rains, and the plants removed into pots or beds. The variegated, when the blossoms are full, is the handsomest.

SALVIA.—There are several varieties : the Salvia Coccinea, of a beautiful scarlet colour, also the blue. Introduced from the Cape; grows in good garden-soil; cultivated from seed.

SWEET PEA. LATHYRUS ODORATUS —The seed should be sown after the rains—at the commencement of the cold season, in pots. It is very seldom that they blossom well.

SAFFLOWER. CARTHAMUS TINCTORIA. *Hind.* KOOSOOM.—This yellow-bearing flower is only cultivated for its dye, and for an oil obtained from the seeds : sown in the rains.

SCABIOSA ALPINA,
„ STELLATA,
„ ATROPURPURA.
„ SPECIES.

This is a beautiful dark purple and white spotted flower, with the scent of honey. The different species may be cultivated during the rains or cold season, and with care it will blossom even during the hot weather : requires a good soil, and watering daily.

TASSEL FLOWER.—Herbaceous plant, with thick fleshy leaves like those of the English house leek ; flowers greenish white. In gardens common.

TRAVELLER'S JOY.—Scandent perennial; flowers white, after the rains, with a rich perfume. The hedges where these plants grow, from the feathery tails of the seeds, have the appearance of being covered with hoar-frost.

TRUMPET FLOWER. BIGNONIA INDICA.—This tree flowers in the rains, and is of a dark purple color ; flowers thick and fleshy ; and bears a large pod more than two feet long and three inches broad.

TUBE ROSE. POLIANTHUS TUBEROSA. *Hind.* GUL-I-SHUBBOO, OR NIGHT-

SCENTED ROSE.—This bears flowers almost at all seasons, but if not watered in the hot weather will spring up at the commencement of the rains. The double Tube Rose is the most esteemed. The perfume towards night is overpowering and sickly.

TULIP TREE. LIRIODENDRON GRANDIFLORA. *Hind.* DOOLE CHUMPA.—This tree bears a large flower, and blossoms generally in the rains. It is highly ornamental, and adapted for a shrubbery, plantation, or lining a road.

VENUS' LOOKING GLASS.—An annual lilac coloured flower, grown from seed; the same as the rest of the Campanulaceæ—alternate, linear, lanceolate leaves, and small terminal, corymbiform flowers, of a bluish white.

VERBENA. VERBENA OFFICINALIS.—Common. It is well known for its strong aromatic lemon scent. It grows from cuttings or layers, and no doubt would also from seed, as it blossoms freely.

VERONICA. VARIEGATED BLUE.—A common pretty shrub.

VALERIAN. CENTRANTHUS RUBER. *Hind.* JAL LUKREE.—This is an annual, and found in many gardens. It grows wild in some parts of the upper provinces of Bengal.

VIOLET. VIOLA ODORATA.—Grows now very common, but best in pots, moderately shaded under a wall, the morning sun being sufficient. The plants must be protected from the hot winds, and divided out into small bunches when transplanted.

VERBESINA SATIVA. *Hind.* RAMTILI.—Cultivated in fields, for the oil it affords: looks very pretty when in flower.

WALL FLOWER.—See Gilly Flower.

WATER LILLY. NELUMBIUM SPECIOSUM.—The sacred bean of India; adopted as the symbol of fertility. In tanks throughout the Concan. Flowers, of various lively hues, of rose color, and more beautiful even than those of the beautiful Nymphea rubra, appear about the beginning of the rains.

WAX FLOWER.—See Tabranamontana Coronaria.

WAX PLANT.—This plant is well adapted for covering trellis work; it grows in gardens or pots: the flowers are of a whitish pink colour, resembling wax.

ZINIA.—ELEGANS, ALBA, CROCEA, &c. &c., and various others, may be all sown at the commencement of the rains, either separately or in beds. The flowers are pretty and ornamental, and require very little care: the seed, if it falls, springs up immediately, and from its profuseness, almost becomes a weed.

INDEX OF TREES, SHRUBS, AND PLANTS.

TREES, SHRUBS, AND PLANTS.

ARRANGED IN THEIR NATURAL ORDER AGREEABLY TO DE CANDOLE.

Order Dilleniaceæ.

Dillenia Speciosa: Native Moota Kurmul.—A large tree; flowers white and yellow, nine inches in diameter; fruit size of a cocoanut. The thick fleshy leaflets of the calyx have an agreeable acid taste, and are eaten by the natives.

Delima Sarmentosa.—A shrub; small white flowers in panicles.

Michelia Rheedii.—Peela chumpa, or golden flowered chumpa.

Order Anonaceæ.

Anonæ Squamosa.—Vide Custard Apple.

„ Reticulata.— „ Bullock's Heart.

„ Muricata.— „ Sour Sop.

„ Cherimolia.— „ „ A soft-fruited Custard Apple, native of Peru.

Uvaria Odorata.—Sweet scented Uvaria.

„ Tomentosa.—A tree, the fruit of which is about the size of a Nutmeg; flowers of purple colour, and hang in clusters.

Order Capparidaceæ.

Cratæva Tapia: Native Varvunna.—A middle sized tree, bearing showy greenish-white flowers; generally found near tombs and temples.

Order Flacourtianeæ.

Flacourtia Sapida.—Vide Panowla Plum.

Order Bixineæ.

Bixa Orellana: Native Arnotto.—A tall shruby plant with large heart-shaped soft velvet leaves on long footstalks; flowers large in loose terminal capsules of a pale peach colour. The capsule prickly. The red pulp which covers the seed is used as a dye, the bark for cordage, the seed for colouring butter by the natives.

Order Malvaceæ.

Hibiscus Mutabilis.—The changeable Rose. A large shrub bearing white flowers in the morning, and changing to red in the course of the day: easily propagated by cuttings.

„ Rosa Sinensis.—The Shoe flower. A large shrub with several varieties of single and double flowers of various colours.

„ Tiliaceus.—Lime tree leaved ditto.

„ Phœniceus.—Purple ditto.

„ Lampas.—Three pointed ditto.

„ Populneus.—Poplar leaved ditto.

Hibiscus Tiliaceus.—Species.—Double orange.

„ —White.

„ —Lead colour.

„ —Small pink.

Sida Acuta.—A shrubby plant with lanceolate leaves and yellow axillary flowers.

Gossypium Religiosum.—A shrub differing in habit from the common cotton plant.

„ Album —Cotton plant.

„ Nigrum.—This is an ornamental shrub ; bears a dark red flower, and is generally cultivated in gardens. From the staple of the wool being short, it is not of much value.

„ Vaupellii.—A shrub eight or ten feet high : grows in Guzerat, and described by Mr Vaupell as being quite distinct from the other species.

ORDER BOMBACEÆ.

Adansonia Digitata. Bhaobob or Monkey Bread Tree.—A large tree with an immense trunk close to the ground : deciduous at the close of the cold season. The fruit is of a large size and used by the fishermen on the coast as floats for their nets. In Africa trees have been found the trunks of which have measured thirty feet in diameter at the base. They generally grow of a corn shape. The natives it is said embalm their dead by scooping out a hollow in the tree and placing the body erect inside.

Bombax Malabaricum. Native Saur.—A large tree, trunk armed with prickles, deciduous in the cold season ; flowers in February and March, of a large bright red colour and vase shaped, which in the morning contains a limpid sweet fluid, and is drank by the natives ; the wood is white, soft, and of little use.

„ Ceiba.—This is a large tree, which in South America and the West Indies is used for canoes.

Oriodendron Anfractuosum.—This is a large erect-growing tree with horizontal branches ; bark of a light green and smooth ; deciduous in the cold season ; flowers drooping, of a dingey white ; capsule size and shape of a goose's egg. The cotton is very silky, and chiefly used for pillows and such purposes : it grows wild in many parts of India.

Durio Zebinthinus.—This is a large tree—the durien of the Malays, and is found mostly in the islands of the Indian archipelago : the fruit has a very strong fœtid scent, and is not at first relished by Europeans.

ORDER BYTTNERIACEÆ—TRIBE 1ST.

Sterculia Fœtida. Jungly Badam.—Poon tree ; grows to a very large size, with digitate leaves ; deciduous in the cold weather. Flowers in

March and April, of a dull crimson colour, and of an offensive odour : the seeds are roasted and eaten.

Sterculia Guttata. Native Goldar.—A large erect tree ; leaves long petioled, villous underneath ; flowers in simple terminal racimes, pubescent on both sides, outer and inner of a pale yellow colour, marked with purple spots ; deciduous. Carpels the size of a large apple, three or more growing together, of a reddish colour ; seeds size of a chesnut, roasted and eaten by the natives.

„ Colorata. Native Bhaee Koee.—A large tree with palmated five-lobed leaves; deciduous in the cold season ; flowers in March and April ; carpels of a bright red, somewhat resembling a broad pod of a pea opened with the peas adhering, and when covered with them gives the tree a strange appearance.

„ Urens Kavalee.—A large tree ; leaves round, cordate and five-lobed ; deciduous in the cold weather ; flowers in February and March, very small ; the carpel is covered with rigid bristly hairs, which puncture like the mucuna pruriens. The bark of the trunk is white, and gives the tree a dead appearance.

„ Villosa.—A large tree ; leaves palmated, five or seven-lobed.

Heritiera Macrophylla.—A small tree, with alternate entire leaves, and flowers in axillary panicles.

BYTTNERIACEÆ—TRIBE 2ND.

Guazama Tomentosa.—Rather a common tree, with small yellow axillary and terminal flowers, capsule woody, tubercled, about the size of a small plum.

Theobroma Cacao.—Chocolate tree. Native of South America and the Straits. Hort. Society's Garden.

Abroma Augusta.—A shrub with soft velvetty branches ; flowers in the rains, of a dark purple colour ; capsule five-angled.

Kleinhovia Hospita.—A tree with alternate broad cordate leaves and small pink flowers in terminal panicles; capsule pear shape and inflated.

HERMANNIACEÆ—TRIBE 4TH.

Reidleia Tilæfolia. Native Mathooree.—A small tree ; the young leaves very soft and velvetty ; flowers small, rose coloured, in axillary and terminal corymbiform panicles, appear in November.

DOMBEYACEÆ—TRIBE 5TH.

Pentapetes Phœnicea.—An erect growing plant ; flowers axillary, large, of a beautiful bright red colour, appear during the rains.

Dombeya Palmata.—A shrub ; leaves palmate, resembling the common castor oil plant ; flowers, in large terminal corymbs, rose coloured, appear in September and October.

„ Angulata.—A shrub ; leaves cordate, accuminate, and serrate ; old ones three or five-angled ; flowers in corymbs, of a pretty rose colour.

Dombeya Tomentosa.—A small tree with rose-coloured flowers, but smaller than the last two species.

Astrapaia Wallichii.—A shrub ; leaves angularly lobed, very soft to the touch ; flowers in large compact umbels. scarlet with yellow anthers, having rather an unpleasant scent.

ORDER TILIACEÆ.

Grewia Hirsuta.—A shrub ; fruit hairy, common in the jungles.

„ Asiatica.—Vide Falsa.

„ Tilliafolia.—A small tree ; common.

„ Microcos.—A large shrub ; flowers in May and June ; wild. The fruit eaten by the natives.

Erinocarpus Nimmonii. Jungle Bendy.—A middle sized tree; flowers yellow in terminal panicles, appear in September and October. Fruit triangular, covered with bristles ; angles somewhat winged, has a pleasing scent.

ORDER DIPTEROCARPEÆ.

Vateria Indica —A large tree, with flowers in terminal panicles; said to yield the resin called copal.

ORDER TERNSTROMIACEÆ.

Cochlospermum Gossypium.—A large tree, leaves lobed, deciduous ; flowers, terminal, large, bright yellow. Appear in March and April, when the tree is destitute of leaves.

„ Serratifolium —A tree resembling the gossypium, but with the lobes of the leaves serrated.

ORDER OLACINEÆ.

Balanites Ægyptiaca. Nat. Hingenbet.—A small thorny tree with alternate bifoliate leaves and greenish white flowers ; fruit about the size of an egg, covered with a smooth dry cortex ; flourishes on black soil.

ORDER ELAEOCARPÆ.

Elaeocarpus Oblongus. Khasson —A handsome tree, foliage tinged with red.

„ Ganitrus.—The nuts are worn as necklaces by Brahmins and faqueers.

ORDER AURANTIACEÆ.

Citrus Aurantium —Orange.

„ Monophylla —Wild.

„ Trifolia.—China, about the size of a marble.

„ Medica.—Citron. This fruit grows to a large size, the outer rind very rough and full of excrescences, and when ripe of a deep yellow colour and fragrant ; used to form a preserve, and the juice is made into lemonade. Propagated by cuttings, layers, or seed.

„ Limonum.—Lemon or lime.

„ Decumaria.—Shaddock or pumblenose.

Limonia Pentaphylla. Native Ash Shoora.—The five-leaved limonia.

„ Acidissima.—A shrub with pinnate leaves, and winged petioles ; fruit small, size of a pea ; an article of commerce, used as a tonic.

Bergera Koœnigii. Native Curry Pâk.—Koodia Neem: a tree with pinnate leaves; flowers in February and March; fruit deep purple colour and strong scented; the leaves are used in curries, &c.

Murraya Exotica. Native Koontie.—An ornamental shrub with white flowers, very fragrant.

„ Paniculata.—A small tree with pinnate leaves; flowers white and fragrant, appear in December and January; fruit reddish.

Ægle Marmelos. Native Bale.—The Bengal Quince; a thorny tree; fruit yellow with a very hard rind; astringent; used in dyeing yellow.

Aglaiæ Odorata.—A shrub with ternate and pinnate leaves, and very small yellow flowers in axillary racimes.

ORDER GUTTIFERÆ.

Garcinea Purpurea. Native Kokum.—A very elegant tree, of a conical form, branches drooping, leaves dark green; fruit round and smooth, size of a crab apple, when ripe of a purple colour throughout; the fruit is eaten and made into syrup.

Mangostana.—Vide Mangosteen.

„ Gambogia.—A very large tree; fruit furrowed; grows in the Deccan.

Mesua Ferrea. Naj Chumpa.—A tree much cultivated for its elegant blossoms with silver petals and anthers like gold; they are highly prized by the natives; their perfume partakes of the rose and violet.

ORDER MALPIGHIACEÆ.

Malpighia Coccifera.—A small stunted shrub, with leaves resembling the box; common in gardens.

„ Madablota. Native Bokhee—Delight of the Woods.—A large climbing shrub with very beautiful white and yellow flowers—four white, one yellow—in terminal racemes; petals fringed; one of the stamens much longer than the rest; fruit unequally three winged.

ORDER SAPINDACEÆ.

Cardiospermum Helicacubrum.—The heart pea or baloon vine; annual climbing plant, with an inflated membranous capsule—hence its name.

Sapo Indicus.—The tree is generally met with about villages; it bears small dingy white flowers in terminal racemes.

„ Fruticosus.—Introduced from the Moluccas; flowers in racemes.

„ Emarginatus. Native Rhete.—Resembles the S. Indicus. The seeds are used medicinally, and also for washing the finer kinds of silk.

Nephelium Litchi.—Vide Leichee.

Blighia Sapida. Native Akhee.—Native of Guinea. Has pinnate leaves, and the habit of a sapindus; fruit, size and shape of a pear, of a red colour, much esteemed in Guinea and the West Indies.

Order Meliaceæ.

Melia Azedarach.—A species of neem, found in all parts of the Deccan, especially round villages.

„ Azadiracta Indica.—Blue Neem tree, or Indian lilac. This tree, like the last, is generally found near habitations; the flower much resembles the lilac, and an oil is expressed from the fruit. The bark is used as a febrifuge; the wood is light, strong, and useful.

Order Cedrelaceæ.

Chloroxilon Swietania.—The satin-wood tree; leaves pinnate; capsular, three celled, three valved fruit; it is a tree with close grained yellow coloured wood like the box.

Swietania Febrifuga. Native Ruhim.—A large tree with pinnate leaves; flowers in April and May, in terminal panicles; capsule size of a small apple, five-celled and five valved, opening from the apex; the bark is a powerful febrifuge, and an excellent substitute for Peruvian bark; grows in the jungles of Goozerat and the Deccan.

„ Tubularis.—A magnificent tree with pinnate leaves, leafets tomentose, capsule four or five valved; seeds arranged in a horizontal position, ripe in January.

Order Ampelideæ—The Vine.

Cissus Quadrangularis, } —Stems four angled, winged and jointed; it has all
„ Species..... } the properties of a parasite; the stems are succulent, and beaten up into a paste, is given by the natives for asthma.

Vitis Indica.—Vide Grape.

„ Vinifera.

„ Species.

Order Oxalideæ.

Averhoa Carambola.—A common tree with thick-set drooping branches; flowers lateral on short racemes, variegated with white and purple; fruit acutely angled; leaves sensitive.

„ Bilimbi. Native Anvullah.—A small tree with pinnate leaves; fruit oblong, obtusely angled, grows on the trunk and branches, of an agreeable acid flavour.

Order Zygophylleæ.

Guiacum Officinale.

Tribulus Lanuginosus.—Annual, with yellow flowers and angular hairy fruit; common.

Order Rutaceæ.

Ruta Graveolens.—Common Rice.

Zanthoxylon Rhetsa.—A large tree armed with sharp prickles; capsules have a strong aromatic taste; the seeds are used for pepper.

Ailanthus Excelsa.—A large tree with pinnate leaves from two to four feet long; leafets coarsely toothed; flowers in terminal panicles, appear in January and Feb. The wood is used for sword handles, &c.

ORDER SIMARUBEÆ.

Samadera Indica.—A tree with large alternate oblong leaves, peduncles long, divided at the top into a small umbel, which becomes pendulous in fruit.

ORDER OCHNACEÆ.

Ochna Squarrosa.—A small tree with acute oblong shining leaves, with numerous yellow flowers growing in racemes from the branches. This is a handsome tree, particularly when in flower.

ORDER RHAMNEÆ.

Ziziphus Xylopyra. Native Gootee.—A small thorny tree ; fruit round, and is used by the moochies for blacking leather.

„ Vulgaris. Native Bhere.—Vide Bhere fruit tree.

Hovenia Dulcis.—A Chinese fruit tree.

ORDER TEREBINTHACEÆ.

Anacardium Occidentale. Native Hijulee Badam.—Vide Cashewnut tree.

Semicarpus Anacardium. Native Bhela.—The juice of this fruit is particularly acrid, and is used for marking linen ; the tree is very common in the Deccan.

Buchanania Latifolia. Native Pyal or Charoonga.—Vide Chirongee.

Mangifera Indica.—Vide Mangoe.

SUB-TRIBE SUMACHINEÆ.

Rhus Lucida.—Shining leaved sumach, introduced from the Cape.

„ Chocliaria.—The elm-leaved sumach. The bark is a powerful astringent; it grows from seed, and if cultivated would prove essentially useful in tanning.

TRIBE 3RD—SPONDIACEÆ.

Spondias Mangifera. Native Ran Amb.—The hog plum ; a large tree with pinnate leaves ; deciduous in the cold weather ; they have a peculiar smell when bruised : the fruit is acid, and only used in curries.

„ Acuminata. Native Ambut.—A middle-sized elegant tree, with shining leaves ; fruit the size of a small egg.

„ Dulcis.—The Otaheite apple, much cultivated in the Society Islands. Introduced in Bombay.

SUB-TRIBE 4TH—BURSEREÆ.

Boswellia Glabra. Native Salphullie or Salai.—A small tree ; leaves pinnate, deciduous ; flowers terminal, small, white with a red nectuary, anthers yellow ; yields the gum salai.

„ Thurifera. Native Dup Salai.—A tree with leaves pinnate as the last; grows on the hills of the Deccan, and both furnish the gum Olibanum.

Balsamodendron Gileadense.—Vide Balm of Gilead.

Garruga Pinnata. Native Kooruk.—A tree, leaves pinnate, deciduous ; flowers of a yellowish white, in panicles covered with a mealy kind of white substance ; fruit size of a small plum, used for pickling.

Order Moringeæ.

Moringa Pterygosperma.—Nat. Moosing ; vide horse-radish tree.

„ Concanensis.—A new species discovered in the Southern Concan.

Order Leguminosæ.

Arbrus Precatorius. Native Goonch.—Indian Liquorice plant ; a twining plant with a woody stem ; flowers at the close of the rains.—See liquorice plant.

Butea Frondosa. Native Pullas.—A large tree, called the Bastard Teak. Flowers in March ; of a beautiful deep red shaded with orange, downy ; they are used to dye with.

„ Parviflora.—A scandent shrub ; the flowers small white.

Clitoria Ternata.—Vide Clitoris.

Desmodium Latifolium.—A shrubby plant, bearing purple flowers.

Erythrina Indica. Native Pangra.—Indian coral tree ; trunk and branches armed with prickles. Flowers in March and April, in terminal horizontal racemes, of a bright scarlet colour. This tree is used as a prop for vines ; grows well by cuttings of any size. There is also a white blossoming erythrina.

Pterocarpus Marsupium. Native Bia or Beebla.—A tree with pinnate leaves and white flowers in terminal panicles. Gum Kino is procured from the bark and leaves.

Flemingia Strobilifera.—A shrubby plant ; leaves simple. Flowers in terminal racemes, imbricated with large inflated kidney-shaped bracts.

Pongamia Glabra. Native Karunj.—A tree with foliage resembling the Bacts ; flowers in April and May : oil is made from the seed.

Dalbergia Sissoo. Native Sissoo.—Sissoo tree, common in the jungles.—Vide Sissoo.

„ Scandens.—A large scandent shrub with dark shining and long drooping racemes of light rose coloured flowers ; appears in the rains : fit for covering a trellis.

„ Latifolia.—This is the Blackwood tree used for furniture.

Subtribe Mimoseæ.

Entada Pusaetha, Acaciaæ. Native Gardul.—An immense climbing shrub forming elegant festoons, legumes from one to three feet long and four or five inches broad, formed of a series of joints, each containing one seed : they are roasted and eaten.

Acacia Stipulata.—The unarmed acacia ; flowers of a pink colour.

„ Catechu.—A small armed tree ; flowers white in long axillary spikes ; furnishes the terra japonica.

„ Speciosa.—A tree of rapid growth ; flowers white, very fragrant, with long stamens.

„ Arabica. Native Babool.—Vide Babool.

Inga Dulcis.—A large and handsome tree, with drooping branches armed with short straight thorns. Pods curiously twisted, filled with a sweet pulp, which forms a nourishing food.

Parkia Byglandulosa. Nat. Chendoo Phool.—A very elegant tree; the flower-buds resemble balls of red velvet, legumes filled with a farinaceous edible pulp.

Adenanthera Pavonina. Red Sandalwood.—An unarmed tree; flowers small, white; the seeds are of a bright scarlet colour, worn as beads, also used as weights; the wood yields a dye used by Brahmins.

Mimosa Pudica.—The sensitive plant.

„ Alba.—The white.

„ Scandens.—The climbing.

„ Adenanthera.—The unarmed.

SUB-TRIBE CÆSALPINEÆ.

Arachis Hypogea.—Vide earth nut.

Cæsalpinia Sappan.—A large armed shrub; flowers in terminal panicles; legumes thick; the seed used for colouring milk, and the wood for dying red.

„ Sepiaria. Native Chilleer.—A scandent strong armed shrub; flowers yellow, generally used to fence round fields.

Parkinsonia Aculeata.—A graceful small tree, with pretty yellow flowers in loose pendulous racemes.

Bauhinea Acuminata.—A shrub; flowers white.

„ Tomentosa.—A shrub; flowers pale sulphur colour.

„ Variegata. N. Rana Raj.—A tree with white or variegated flowers.

„ Purpuera.—A tree with deep rose coloured flowers, very fragrant; appear at the commencement of the rains.

„ Vahlii. N. Chamboulie.—An immense scandent shrub; leaves about a foot in breadth with rounded lobes; legumes pendulous, from twelve to twenty inches long, covered with a brown velvet down.

„ Anguinea.—An extensive and rambling shrub, with flexuous compressed stems and small white flowers. The Bauhinians are highly ornamental, and may be known by their curious double lobed leaves.

Cassia Fistula. Native Dhawa.—Vide Cassia.

„ Alata.—A stunted shrub, pretty when in flower.

„ Florida.—A handsome tree, with bright yellow flowers.

„ Auriculata.—A very common shrub, grows abundantly in all parts of India; used to make native tooth-brushes.

„ Launceolata.—Leaves used as senna.

Poinciana Pulcherrima.—The goldmohur flower; colour deep orange and yellow; the petals resemble the crest of the peacock; common in most gardens.

„ Elata.—An unarmed tree, with showy yellow flowers.

Tamarindicus Indica.—Vide Tamarind.

TRIBE 8TH—ORDER ROSACEÆ.

Rubrus Lasiocarpus.—Vide Blackberry.

„ Rugosus.—Vide Raspberry.

Fragaria.—Vide Strawberry.

Amygdalineæ.

Amygdalus Persica.—Vide Peach.

„ Communis.—Vide Almond.

Prunus Armeniaca.—Vide Apricot.

„ Cerasus.—Vide Cherry.

Pomaceæ.

Pyrus Malus.—Vide Apple.

„ Communis.—Vide Pear.

„ Cydonia.—Quince.

Eriobotrea Japonica.—Vide Loquat.

Chrysobolanus Icaco.—Coco plum tree.

Parinarium Excelsum.—A large tree brought to Bombay from Goa; the fruit ripens in December and January, which resembles a coarse plum, and is held in much estimation.

Order Granateæ.

Punica Granatum.—Vide Pomegranate.

Order Memecyleæ.

Memecylon Tinctorium. Native Anjunee.—A highly ornamental tree with deep green shining leaves; flowers in February and March, of a purple colour, with the calyx beautifully streaked on the inside; it is called the iron-wood tree.

Order Combretaceæ.

Terminalia Catappa.—See Almond, Indian.

„ Bilirica. Native Bherdu.—A very large tree; leaves deciduous about the beginning of the hot season, when the flowers appear; fruit round, covered with a grey silky down; common in the Deccan. The flowers have an offensive scent.

„ Chebula. Native Heerda.—A large tree; flowers in May. The moochies use the fruit to form a black dye.

„ Nitida. Native Yella.—A large tree with oblong fruit, from which an intoxicating liquor is made.

Pentaptera Tomentosa. Native Ayeen.—A large jungle tree with thick leathery leaves; fruit smooth five winged; the fibre of the wood is very tough, and used for making shafts to gigs &c.

Quisqualis Indica.—A scandent shrub, with beautiful flowers of various colours, from white to orange and deep red; has a very powerful perfume towards night. It grows from layers, and seed, but the latter are very difficult to find. It is sometimes called the Rangoon creeper.

Order Lythrarieæ.

Lagerstroemia Indica. Native Henna.—China mendie. A common shrub in gardens, and used for border hedges; it bears a small reddish flower, and grows easily from cuttings at the commencement and during the rains.

„ Alba.—This is the white flowering species.

Lagerstroemia Elegans.—A small tree with opposite oblong leaves; flowers in May in large terminal panicles of a dark blue or purple colour, exceedingly showy.

„ Lanceolata.—An erect growing tree, with white flowers.

ORDER TAMARISCINEÆ.

Tamarix Indica. Native Jhaoo.—A small tree or shrub; grows abundantly in the beds of many rivers, and affords great shelter for all sorts of game.

„ Dioica.—A very graceful shrub, with numerous small rose-coloured flowers in terminal drooping spikes; common in the beds of rivers.

ORDER ALANGIÆ.

Alangium Decapitalum. Native Ankool.—A small tree with whitish flowers; the petals vary on the same tree from six, eight, or ten. The fruit is astringent, but eaten by the natives.

ORDER PHILADELPHIÆ.

Dentzia Scabra.

Philadelphus Coronarius.

ORDER MYRTACEÆ.

Eugenia Jambosa,
„ Malaccensis. } Vide Rose Apple.

Syzygium Jambolana. Native Jambool—Vide Jamoon.

Myrtis Communis.—Vide Myrtle.

Careya Arborea,
„ Spharica. } A large tree, deciduous in the cold season; bears an oblong fruit size of an egg; has a very peculiar scent, no use is made of it.

Psideum Pyriferum,
„ Pomiferum. } Vide Guava.

Caryophylus Aromaticus.—The common clove tree, bearing the cloves of commerce.

Eugenia Acris. Native Sung.—Vide the wild clove tree.

2ND—CAPSULAREÆ.

Melaleuca Leucadendron.—The silver tree.

3RD—LECYTHIDEÆ.

Barringtonia Speciosa.—A large tree, flowers in pendulous racemes of a dark scarlet colour, fragrant; fruit oblong, four sided sharp angles.

ORDER CUCURBITACEÆ.

Cucumis Sativus.—Vide common cucumber.

„ Melo—Melon.

Momordica Charantia.—Kairala.

Trichosanthes Anguinea.—Snake gourd.

Bryonia Grandis.—Small sized variety.

ORDER UMBELLIFEREÆ.

Hydrocotyle Asiatica.—An herbaceous plant; grows in shady moist places.

ORDER ARABIACEÆ.

Panax Obtusum.—A shrub, in gardens rare.

Order Caprifoliaceæ.

Caprifolium Sempervirens.—Trumpet honey-suckle.

„ Italicum.

„ Chinensis.

Lonicera Leschenaultii.—A twining villous shrub, native of the Neilgherries.

Cornus Macrophyllus.

Symphoria Involucrata.

Order Rubiaceæ.

Coffea Arabica.—Vide Coffee.

Tribe 4th—Guettardaceæ.

Guettarda Speciosa.—A small tree, with large white fragrant flowers.

Nauclea Cadamba. Native Cuddam.—This tree grows to a very large size, common about villages; the fruit is eaten by the natives, who esteem the tree as "holy."

Order Myrsinaceæ.

Embilia Titrandra. Native Ambut.—A scandent shrub with alternate polished leaves; flowers in the cold season; fruit red, size of a currant.

„ Ribis.—Another of the species; a scandent shrub like the former, only with rough tuberous knobs on the stem; both are confined to the higher ranges of mountains.

Order Sapotaceæ.

Achras Sapota.—Vide Sapota.

Mimusops Elengi. Native Taindoo.—An ornamental tree with dark green oblong alternate leaves, and white fragrant flowers; common.

Bassia Latifolia. Native Mowhra.—This tree is very common; deciduous in the cold season. An intoxicating spirit is distilled from the flowers, which have a very disagreeable scent; the seeds yield an oil which is used to adulterate ghee.

Chrysophilium Acuminatum.—Vide star apple.

Order Ebenaceæ.

Diospyros Glutinosa.—A small tree bearing a rusty-coloured fruit abounding in a glutinous juice; used in bookbinding, being obnoxious to worms.

„ Ebinum.—The ebony tree of Ceylon.

„ Sapota.—Vide Sapota.

Order Oleinæ.

Phillyrea Paniculata—A small tree with oblong ovate leaves; flowers in terminal panicles, pure white, bending down the branches, and giving the tree a graceful appearance.

Olea Sativa.—The box-leaved variety of the common olive introduced from Egypt.

„ Fragrans.—A small tree, with lanceolate leaves, and sweet-scented yellowish white flowers.

„ Dioica—Vide Indian plum.

ORDER STRYCHNEÆ.

Strychnos Nux Vomica. Native Kajra.—This tree grows in the hilly parts of the Concans; the nuts are used for poisoning fish.

„ Potatorum. Nat. Gajra.—Vide clearing nut used for purifying water.

Colubrina.—A scandent shrub with tendrils; fruit the size of an orange. The Telingees esteem the root as an infallible remedy in the bite of the cobra snake.

ORDER APOCYNACEÆ.

Allamanda Cathartica.—A scandent milky shrub, with large yellow flowers, which blossom in succession throughout the year. A native of South America: common in gardens.

Cerbera Fruticosa.—A native of salt marshes; is the ordeal tree of Madagascar.

„ Thevetia.—A large shrub with leaves like the oleander, and bill shaped yellow flowers; common, easily propagated by cuttings.

Carissa Carandas.—The wild corinda grows throughout the Concan.

„ Spinarum.—Vide Kurunder.

Nerium Antidysentericum. Native Inderjot.—A common shrub; flowers in April and May in terminal corymbs.

„ Oleander.—Common Oleander.

„ Grandiflorum.—Double blossoming.

Tabernæmontana Coronaria. Native Tuggai.—A common shrub in gardens, with sometimes double white flowers (like wax); the leaves a shining green. Grows by cuttings.

„ Flore Pleno.—The double flowered.

Wrightia Coccinea.—A large tree; flowers externally green, internally deep orange red, having something the perfume of the pineapple.

„ Tinctoria. Native Kala Kooda.—A small tree with pale green soft leaves; deciduous in the cold weather. On being bruised, a kind of Indigo exudes from them. Fowers in March and April; white follicles in pairs, from twelve to eighteen inches long, which as they ripen the ends of each pair curiously join. The wood is used by turners and cabinet-makers.

Beaumontia Grandiflora.—A gigantic climbing shrub; flowers in February, and very showy. Native of Nepaul.

Echites Paniculata.—A climbing shrub, with large white flowers; habit as the last.

„ Accuminata.—Ditto.

Plumiera Accuminata. Native Khair Chumpa.—A small elegant tree, common; flowers white and yellow, tinged with red, very fragrant. A pure white caoutchouc is obtained from this tree.

„ Alba.—White ditto.

Vinca Rosea.—A small perennial, common in gardens; in flower all the year.

„ Alba.—White ditto; flowers in the rains.

Hoya Carnosa.—Wax plant. Common in gardens both in Bombay and the Deccan; the flowers pink, in large umbels, and very beautiful. It is well adapted for covering trellis work: propagated both by layers and slips.

Stapelia Buffonia.—The toad-like stapelia. A stemless plant, with fœtid flowers resembling a toad's back.

„ Grandiflora.

„ Variegata.

„ Species.

Pergularia Odoratissima.—Climbing woody stem, with deeply cracked bark and very fragrant yellow flowers.

Asclepias Curassavica.—An erect growing plant, with linear lanceolate leaves; flowers terminal, of a reddish orange colour. The root dried and pounded is used as an emetic.

Oxystelma Esculentum.—A twining perennial; deciduous, flowers in the rains, large white, with a slight tinge of rose colour, and streaked with purple veins; texture thin and delicate.

Sacostemma Viminale.—A voluble leafless plant, resembling the euphorbia tirucalli; flowers white, in the rains.

Order Bignoniaceæ.

Bignonia Undulata.—A tree with drooping branches like the weeping willow; leaves covered with micaceous scales; flowers in lateral racemes, very large, orange-coloured, and scentless.

„ Grandiflora.

„ Indica.—A large tree.

„ Chelonoides.—Ditto.

„ Stans.—A tall shrub; flowers yellow and red.

„ Species.

„ Radicans.—The ashed-leaved trumpet-flower; stems with rooting joints; flowers in large branches, of a scarlet orange colour. All the species have beautiful flowers, and are well worthy of cultivation as ornamental plants.

Spathodea Uncinata.

Amphilobium Mutisii.

Tecoma Capensis.

„ Jasmonoides.

Millingtonia Hortensis.

Order Pedalineæ.

Sesamum Orientale. Native Gingelie.—A common plant springing up in waste places, and flowering towards the close of the rains; the flowers resemble the fox glove.

Martynia Diandria.—An herbaceous plant with large cordate leaves, covered with a glutinous dew-like substance; flowers diandruous, much like those of the sesamum capsule, with a curious double hooked bill.

Pedalium Murex.—A succulent plant, with small yellow flowers.

Order Convolvulaceæ.

Ipomea Bonanox.—Large white creeper; blossoms towards evening.

„ Quamoclit.—Winged leaved.

Ipomea Bonanox.—Coccinea.—Scarlet.
„ Muricata.—Hairy.
„ Rubro Ceruleus.—Blue and pink.
„ Tyrianthina.—Bright violet.
„ Violacea.—Violet Blue.
„ Splendens.—Pale red.
„ Tuberosa.—Yellow.
„ Species.
Argyreia Cuneata.—Purple.
„ Acuta.—Showy white.
„ Speciosa.—Elephant Creeper.
Pharbites Hispida.—Pale blue pharbites; flowers large.
Quamoclit Phœnicia —Crimson flower, tube long and slender.
„ Vulgaris.—Indian forget-me-not; rosy red flower.
„ Alba.—Pure white.
Cuscuta Reflexa. Native Akas Pawan.—A parasite with viliform twining succulent stems; leafless, smooth yellow; flowers white.
„ Species.
Batatas Paniculata.—Beautiful dark purple flowers.
„ Pentaphylla.—Twining, very hairy; flowers in the rains, cream coloured.
Porana Volubilis. Native Bhowree.—Annual twining filiform; leaves cordate accuminate; flowers in axillary and terminal racemes, appear in the cold weather.
Calonyction Roxberghii. Native Chandnee.—Armed with inoffensive prickles. Flowers very large and white, six inches in diameter; blossoms about sunset, when you may observe them open; slightly fragrant; close up in the morning.
„ Muricatum.—Flowers bluish purple.

ORDER SOLANACEÆ.

Solanum Tuberosum.—Vide Potatoe.
„ Melongena.—Brinjal, egg plant.
Lycopersicum Esculentum.—Vide Tomata.
Capsicum Annuum.—Vide Capsicum.
„ Chinensis.
„ Nepaulentia.
„ Niger.
„ Species.
Physalis Peruviana.—See country Gooseberry.

SUB NICOTIANEÆ.

Nicotiana Tabacum.—The well-known Tobacco plant.
„ Persica.—Shiraz Tobacco.

ORDER SCROPHULARINEÆ.

SUB TRIBE 2ND—TETRANDRIÆ.

Lavendula Vera.—Vide Lavender.
„ Species.

Thymus Vulgaris.—Thyme.
Origanum Marjorum.—Marjoram.
Leonurus Tataricus.—Mother Wort.

Order Verbenaceæ.

Verbena Officinalis.—Vide Verbena.
„ Triphylla.—Lemon-scented.
Stachytapheta Mutabilis.—A shrubby plant with variegated scarlet flowers in terminal spikes; propagated by cuttings.
„ Jamaicensis.—An annual, with blue flowers in terminal spikes; common.
„ Species.
Vitex Trifolia.—A common shrub, with blue flowers.
„ Species. Native Neirgoonda.—Grows in patches along the sides and beds of nullahs and rivers.
Emelina Arborea.—A large tree; leaves petioled, cordate and pointed; flowers in April and May, large yellow, tinged with brown. The wood of the tree is used for making the cylinders of drums &c.
„ Parviflora.—A shrub; with small scolloped leaves and large yellow flowers armed with thorns, and forms an excellent hedge.
Volkameria Flore Pleno. Native Irun.—A large common shrub with ovate cordate dentate leaves; white fragrant flowers (in the cold weather) in terminal panicles.
„ Inerme.—A scandentamous shrub; pure white flowers. Hedges are made with it; in blossom nearly throughout the year.
Duranta Ellisia.
„ Plumieri.
Siphonanthus Indica. Native Barungee.—A tall erect-growing suffruticose plant, with linnear leaves; flowers white or cream coloured, with long tubes.
„ Fragrans.—Double variety, native of China.

Order Acanthaceæ.

Justicia Picta.—Vide Justitia.
„ Ecbolium.—A shrubby plant, with azure-coloured flowers.
„ Paniculata. Native Creyat.—Basis of a famous French bitter tincture called Drogue amére, highly valued for its stomachic and tonic properties.
„ Nasuta.—A shrubby plant with white flowers in axillary and terminal panicles; grows spreading along the ground. The leaves are bruised and used by the natives for curing ringworm.
„ Coccinea.—This is a species bearing a small pink flower. The leaves are of a reddish colour underneath. It is said by the natives that the root is an antidote to the bite of a snake, and that it is the root sought after by them when bitten by the cobra.
„ Gendarussa.—This plant is of a dark purple hue; the leaves when rubbed have a strong and not unpleasant smell; they are roasted and given by the natives in chronic rheumatism.

Asystasia Formusa.

Barleria Purpurea.—A shrubby spreading plant, with opposite, subrotund nearly sextile leaves; spines in axillary pairs longer than the leaves; flowers solitary, large, of a beautiful pink colour.

„ Christata.—A shrubby unarmed plant; leaves sextile, broad lanceolate flowers axillary, of a blue colour dashed with purple. A very beautiful shrub when in flower.

Peristrophe Lanceolaria.

„ Speciosa.

Crossandra Axillaris.

ORDER NYCTAGINEÆ.

Pisonia Grandis.—A straggling shrub, armed with strong axillary recurved thorns; flowers small, in axillary terminal panicles. Forms an excellent hedge plant.

„ Inermis.—Without thorns.

ORDER PHYTOLACEÆ.

Phytolacea Icosandra.—An herbaceous plant; leaves alternate, entire, without stipules; flowers racemose. A tincture from the ripe berries has the reputation of being a remedy for chronic rheumatism and for allaying syphiloid pain.

ORDER CHENOPODEÆ.

Basella Alba. Native Doodee.—A twining succulent plant, with smooth fleshy leaves; grows very rapidly from seed, and is eaten as spinage.

ORDER BEGONIACEÆ.

Begonia Reniformis.—An herbaceous succulent plant; flowers of a pale pink colour, and fragrant.

ORDER LAURINEÆ.

Laurus.—Vide the Laurel.

„ Camphorifera.—Camphor tree of China, introduced into Bombay by N.

„ Cinnamomum.—Vide Cinnamon.

Persea Gratissima.—Vide Alligator Pear.

ORDER MYRISTICEÆ.

Myristica Moschata.—Vide Nutmeg.

ORDER PROTEACEÆ.

Personia, Species.—Of the Embothrium, the Haken, Banksia, and Personia, are the only few of the species introduced from the Cape and New South Wales, being chiefly confined to the southern hemisphere. They are handsome green shrubs, and prized by gardeners for the neatness of their appearance and beauty.

ORDER SANTALACEÆ.

Santalum Album.—Vide Sandalwood.

ORDER ELOÆDENATILÆ.

Eleagnus Dulcis.—The tree or shrub is usually covered with leprous scales; leaves alternate or opposite, entire, without stipules. Flowers

axillary—often fragrant. The fruit is about the size of a small olive, oblong. It is eaten by the Persians.

Elœagnus Conferta. Native Amgoolee.—A scandent shrub, with silver coloured leaves beneath. The fruit is red when ripe, and eaten by the natives.

ORDER ARISTOLOCHIÆ.

Aristolochia Indica.—A twining shrubby plant; leaves alternate, simple stalked, scolloped leaves; flowers axillary, solitary, and of a dark colour. The root is very bitter.

„ Bracteata. Native Kuramar.—A trailing plant; leaves alternate and kidney shaped, glaucous beneath; flowers solitary, of a dark purple colour. The juice of this plant is squeezed into wounds to kill worms, and an infusion of the dried leaves given as an anthelmintic. The green leaves pounded up with castor oil is a valuable remedy in obstinate psora.

There is an aromatic bitter species known in Spanish America as a certain antidote to the bite of venomous snakes: it is called Raiz de Mato.

„ Acuminata —Perennial twining plant, with large drooping flowers of a dark purple colour.

ORDER EUPHORBIACEÆ.

Euphorbia Nerifolia. Native Thor.—Common prickly pear. Grows all over the rocky parts of the Deccan. It has a whitish dead appearance except during the rains, and forms a capital fence round fields &c.

„ Terucalli.—Vide Milk hedge.

„ Ligularia —With twisted five angled stems: common.

„ Antiquorum.—A leafless curious looking shrub, with spreading triangular branches from a four angled stem, armed with double spines: common.

Ciceæ Disticha. Native Harparewree.—Country Gooseberry. A small tree, leaves pennate, from one to two feet long, scattered about the ends of the branches. Flowers small, of a reddish colour. Fruit round, size of a gooseberry: it has an acid flavour.

Rottleria Tinctoria. Native Shendree.—Monkey's face tree, from their rubbing their faces with the fruit. A large tree with alternate, ovate oblong leaves, of a ferruginous colour beneath; flowers in the cold weather. Fruit size of a pea, covered with a red meally powder, used as a dye.

Aleurites Triloba.—Vide Walnut.

Codiæum Variegatum.

„ Longifolia.

„ Species.

Phyllanthus Embilica. Aunlee.—Vide Aunlee.

„ Rhamnoides.

„ Longifolius.

Jatropha Panduræfolia.—The Tapioca plant. This is a shrub with palmate leaves resembling the castor oil plant; it is of easy culture. The juice fresh from the roots is highly poisonous; but the root when roasted or boiled, may be eaten with safety: it yields a nutricious flour, also tapioca.

„ Multifida.—Vide Coral plant.

„ Curcas.—The angular leaved physic nut. This is a plant principally used as a hedge, from its easy growth; it flowers in the rains.

Croton Variegatum.—Vide Laurel.

„ Tiglium.—A small tree, leaves alternate ovate cordate, from three to five inches long and two or three broad; yields the croton oil.

„ Sibiferum.—Vide Tallow tree.

Ricinus Vulgaris.—Vide Castor oil.

Hura Crepitans.—The sand box tree; a small armed tree of rapid growth. The fruit resembles a small orange without the peel, and when ripe, its numerous valves burst with an elastic jerk.

Xylophylla Angustifolia.

Poinsettia Pulcherrium.

Order Urticaceæ.

Artocarpus Incisa.—Vide Bread Fruit.

„ Integrifolia.—Vide Jack tree.

Ficus Nitida.—A common tree in the jungle.

„ Religiosa.—The purple tree.

„ Elastica.—The Indian rubber tree. A very handsome tree with large glossy leaves. Furnishes caoutchouc.

„ Glomerata.—A large tree with fruit like the common fig, which is sometimes eaten.

„ Carica.—Vide fig.

Maclura Tinctoria.—Fustic, a yellow dye, is yielded by this tree.

Morus Indica.

„ Alba.—Vide Fig.

„ Nigra.

„ Atropurpurea.

Broussonetia Papyrifera.—A kind of paper is made from the bark of this tree.

Order Amentaceæ.

Quercus.—Vide Oak.

Order Myricaceæ.

Casuarina Muricata, Equisitifolia.—Vide Fir or Tinian pine.

Order Coniferæ.

Juniperus Virginiana. Juniper communis.—Is found in the northern hills, from whence the berries are brought.

„ Chinensis. Arbor Vitæ.—Chinese juniper, brought from that country.

Pinus Longifolia. Long-leaved pine.—A tall erect-growing shrub, with subverticelled branches and linnear lanceolated leaves.—Introduced from the Cape.

Cupressus Glauca.—Vide Cypress.

Agathis Australis.—The New Zealand pine. A most stately pine, lately introduced from the Cape into the Horticultural Society's Garden Bombay, by A. N. Shaw, Esq.

„ Lorantifolia.—Dammer pine of the Eastern isles.

ORDER CYCADEÆ.

Cycus Circinalis.—A very handsome tree, in appearance resembling the Palm tribe, but related to the Coniferæ: common from Tellicherry to the foot of the Ghauts.

ORDER ORCHIDACEÆ.

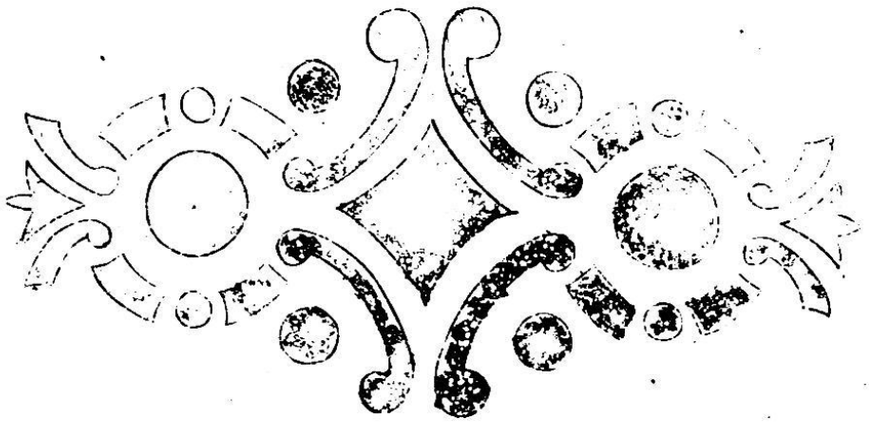
Aeridas Retusum.—Parasitic plant; leaves sub-radical, linear, thick, with a retuse apex. Flowers in long racemes, reddish spotted, very beautiful: appear in April and May.

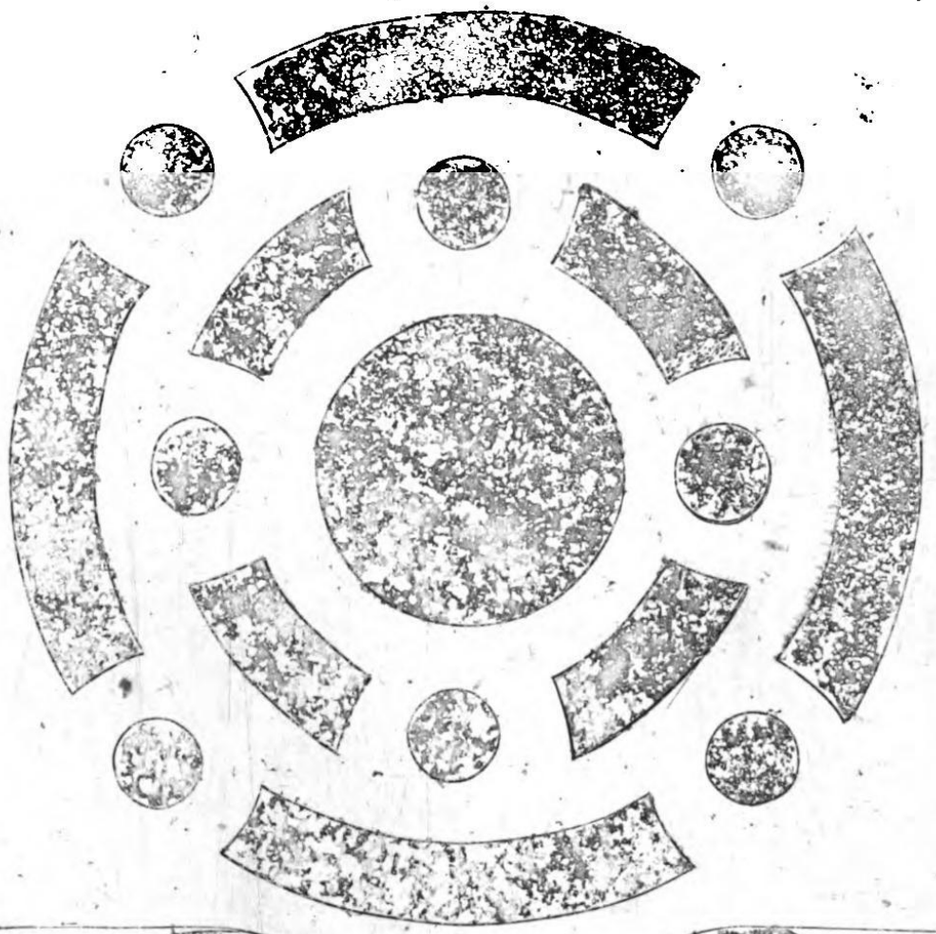
„ Praemorsum.—Flowers like the last.

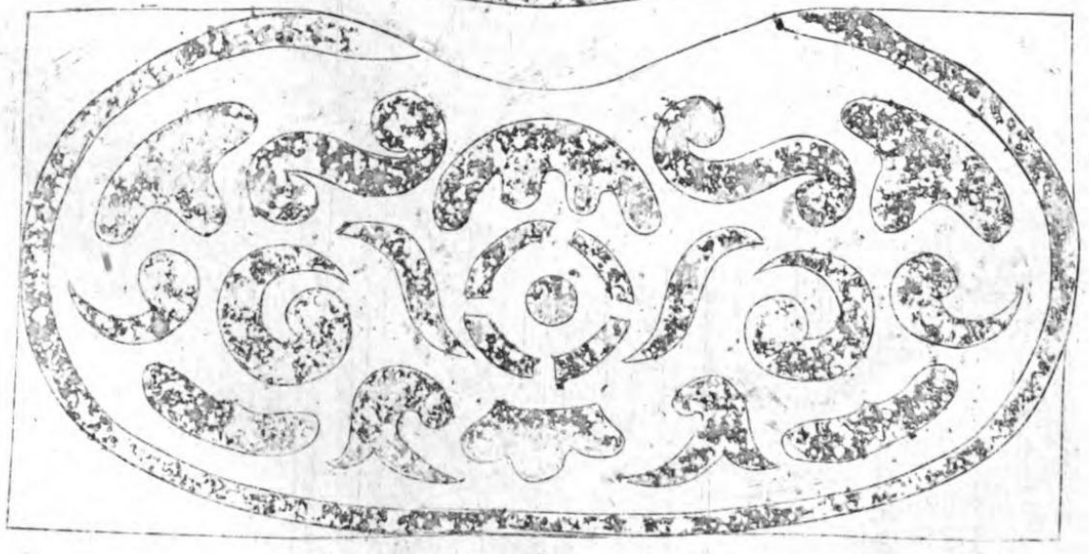
„ Multiflorum.—Leaves linear, channelled, obliquely emarginate, with a hooked point; flowers in long racemes of a beautiful pink colour. Found mostly on mangoe trees.

Dendrobium Peirardi.—A parasite; caulescent, stems leafless, from six to twelve inches long, round jointed; flowers, several towards the top of the stem, of a light rose colour.

„ Albus.—Parasitic. Flowers in racemes, white.







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Oleander...	...Nerium Oleander... ... ...
Olibanum...	...Boswellia Thurifera... ....
Opuntea...	...Opuntia Cochinillifera..... ...
Orange...	...Citrus Orantium... ... ...
Orchis.....	...Orchis Commelinefolia..... ...
Palm, Fan-leaved...	...Borassus Flabilliformis..... ...
Paneola Plum...	...Flacourtia Cataphracta..... ...
Papaw Tree...	...Carica Papoya... ... ...
Peach...	...Amygdalus Persica... .. ..
Pear.....	...Pyrus Communis... ... ...
Pine Apple...	...Bromelia Ananas... ....
Pistachio...	...Pistacia Officinarum... ... ...
Plantain...	...Musa Sapientum... ... ...
Plum.....	...Prunus Domestica... ... ...
Pomegranate...	...Punica Granatum... ... ...
Prickly Pear...	...Cactus Opuntia... ... ...
Pumblemas.....	...Citrus Accumana... ... ...
Quince...	...Cydonia Vulgaris... ... ...
Raspberry...	...Rubrus Pauciflorus... ... ...
Rhubarb...	...Rheum Rhaponticum... ... ...
Rose Apple...	...Eugenia Jambosa... ... ...
Sapota...	...Achras Sapota... ... .
Sago Palm...	...Phœnix Farinifera... ... ...
Salep...	...Orchis Mascula... ... .
Silk Cotton Tree	...Bombax Malabaricum... ... ...
Sindee Tree...	...Phœnix Sylvestris.... ... ...
Sissoo...	...Dalbergia Sissoo... .. ...
Sandal Wood...	...Santalum Album... ... ...
Soap Berry Tree...	...Sapindus Laurifolius... ... ...
Singara Nut...	...Trapa Bispinosa..... ... ...
Sour Sop...	...Annona Muricata... ....
Slipper Plant...	...Euphorbia Tithymaloides. ...
Snake Fruit...	...Eleagnus Confirta... ... .
Strawberry...	...Fragaria... ... ...
Sugar Cane...	...Saccharum Officinarum..... ...
Star Apple...	...Chrysophyllum Acuminatum ...
Sumach...	...Rhus Lucida... ... ...
Tamarind...	...Tamarindus Indica... ... ...
Tallow Tree...	...Sapium Sibiferum... ... ...
Thorn Apple...	...Datura... ... ...
Tobacco...	...Nicotiana Tabacum... ... ...
Urania...	...Urania Speciosa..... ... ...
Vine...	...Vitis Vinifera... ... ...
Wampee Tree...	...Cookia Punctata... ... ...
Walnut...	...Aleurites Punctata... ....
Yucca...	...Yucca Gloriossa... ... ...

FRUITS, FLOWERS, AND TREES.

ACACIA ARABICA. *Hind.* BABOOL.—Very common all over the Deccan, and thrives in any soil. Being of rapid growth, and requiring neither care or water, is worthy of cultivation more extensively than it is, even for firewood. The flowers are yellow, and the pods when ripe are greedily devoured by sheep and goats. Another species, which grows more like broom, and very erect, is extremely ornamental, but the Natives have an objection to the tree from some superstitious motive, and an ill omen being attached to it. The wood of both species is hard, and used for wheels, ploughs, &c.

ALMOND, PERSIAN. AMYGDALIS COMMUNIS. *Hind.* BADAM.—This tree never bears fruit, and is only grown as an exotic: it might be used as stocks for the peach, plum, &c.

ALMOND, INDIAN. TERMINALIA CATAPPA. *Hind.* BADDAM-U-HUNDEE.—This tree grows commonly in all parts of the Deccan. It is raised easily from seed, and in a good light soil, well watered, will in two years be ten or more feet in height, and give blossom. It is rather a handsome tree, and, from its large leaf (which turns red previous to its falling off,) has a very striking appearance. The fruit is of the size of a coarse plum, and the kernel, contained within the shell, resembles the English Filbert in flavor. It is produced at table with the dessert.

ALMOND, WILD.

ALOE, COMMON. ALOE PERFOLIATA. *Hind.* KOOUR.—Is so generally known as to need no description. It is chiefly planted to form hedge-rows, and makes an excellent fence. It flowers in the rains, and the stem grows to the height of ten or twelve feet. The leaves make a good common cordage, or rope, used for drawing moats, &c.

AUNLA OR AWLA. PHYLLANTHUS EMBLICA.—This tree I have seen in gardens in Bombay, but the fruit is small. It resembles a red gooseberry in appearance. There seems to be some difficulty to get it to bear fruit in the Deccan, as far as I have been able to observe. It grows wild throughout both the Concan and Deccan, also in the Southern Mahratta Country. The fruit is eaten by the Natives.

APPLE, ENGLISH. PYRUS MALA. N. SEYB OR SEEOO.—In the Deccan, I have met with two sorts, like the brown russet, and a yellow striped pippin. These trees only bear but once a year, and require the same treatment as the Persian apple. They should have their roots opened once, towards the end of October. The buds grafted on the Persian stock take readily. Be careful that the borer (a species of caterpillar) does not get into the stem and branches, as described under the head of clearing trees.

Apple, Persian, or Common.—The two sorts of apples commonly found in most Native gardens in the Deccan, are said to have been first introduced from Persia. They are of a small description : one, sweet and luscious, grows in bunches ; the other, which is larger, has a rough taste, and is better adapted for tarts. They may be propagated by layers, suckers, and even cuttings.

The young plant should never be allowed to throw out branches at less than two or three feet from the ground : all the buds beneath must be rubbed off. Never plant them closer than from nine to twelve feet to each other, and if you have sufficient ground, keep them separate from other trees, so that you can either winter or water them as you wish. Remove all suckers round the stem of the tree, or from the roots, [unless required for stocks,] when cut them clean off with a sharp knife. The trees may be opened immediately after the rains, if not in blossom. Pluck off all the leaves carefully, and beware, in so doing, that the blossom buds are not injured, which native Mallys, in the careless manner of stripping the leaves, are very apt to do;—then prune the tree. As soon as the blossom appears set, put plenty of old rich manure to them, and water well every third day until the fruit is nearly ripe. If you continue watering after this, it makes the fruit mealy and insipid. When the fruit is all gathered, cease to water the trees, and as soon as the leaves turn brown and dry, which will be in the course of a month, then open the roots for two or three days, cover with manure again, and water well as before, when you will probably get a second crop in April or May.

Apple, Otaheitee.

Alligator Pear. Laurus Persea.—This tree grows to a large size. The wood is very brittle, and requires much water. It bears fruit during the rains, the size of a baking pear, but to describe it more accurately would be to say that it is from six to eight inches long, and in the thickest part about three inches in diameter. It is called Subaltern's butter. The outside has a dark green skin, rather thin ; and inside a soft whitish pulp, which may easily be divided with a spoon. The seed is about the size of a pigeon's egg, and will grow if planted immediately. The flavor of the pulp is sweet and creamy, and perhaps the name of Subaltern's butter is derived from this particular taste and appearance. The Natives do not seem fond of it.

Arrow Root. Curcuma.—This root grows wild in all the hilly parts of the Deccan, and is used by the natives for food. The West Indian Arrowroot produces the most farinaceous matter The tubers should be planted in a good rich soil, about one foot apart, just before the rainy reason; and taken up as soon as the leaves are dry. Rats, porcupines, and wild hogs, are very destructive to it, both when first sown, and also when ripe. Such tubers as are required for seed should be kept in a dry place on sand.

Arnotto.

Apricot Prunus Arminiaca.—This tree I have seen grow to a large size in a garden at Aurungabad. It blossomed at the same time with the peach, from January to March. The fruit formed and grew to the size of a common marble, after which they dropped off. Every care was taken to prevent this, but all attempts were useless ; and I believe now the trees are dead. I made many efforts to get buds to take on peach and almond trees, but did not succeed. I also tried

by approach, with no better result. It grows well on the first range of the Himalayahs. Treatment—the same as the peach.

BAMBOO. BAMBUSA ARUNDINACEA. *Hind.* BAS.—This tree grows in all parts of the Deccan, both in the hills and jungles, therefore needs little description. There are two species, male and female. A sort of gum called Tabasheer is found in the hollow joints of the latter, and sold at a high price among the natives. These trees when in clumps are very handsome, but make a great litter when the leaves begin to fall after the rains. Nothing however can be more beautiful than the foliage when in fresh leaf. The young shoots, just as they strike out of the ground, are made into pickle, and also boiled and eaten by the poorer classes. The seed is also boiled with meat and spice, and formed into a broth or soup. There is also a species in Bengal bearing a pear-shape fruit—the Bambusa Melocanna.

BANYAN. FICUS INDICA.—Common all over India, and in some places of an immense size.—" Lieut. Col. Sykes mentions one at the Village of Mhow, in the " Poona Collectorate, with 68 stems descending from the branches, and capable " of affording shade, with a vertical sun, to 20,000 men."

BASTARD CEDAR. CEDRELA TOONA.—This tree grows in the ravines of the Concan. Its timber resembles mahogany, and is used very extensively in Bengal for furniture. The flowers are used in Mysore and other parts of India, which form a beautiful red dye, with which cotton is colored. The bark is very astringent, and is used by the natives in cases of fever. It is called bastard cedar from an aromatic resin exuding from it resembling the American cedar. Flowers white, very numerous, but small, smelling like honey.

BABOOL.—See Acacia Arabica.

BAUHINIA CANDIDA, CACHANIAR, (3 SPECIES).—This is a small handsome tree, bearing numerous white and large flowers about the month of February. Leaves two lobed, and found in most gardens.

BAUHINIA VARIEGATA. KANA RAJ OR KUNCHUM.—A large tree, bearing variegated flowers with similar double lobed leaves, peculiar to the Bauhenians.

BAUHINIA PURPUERA.—A similar tree, blossoming at the commencement of the rains, bearing fragrant flowers of a deep rose color.

BEETLE NUT PALM. ARECHA CATECHU. *Hind.* FOFLEE SOOPAREE.—This beautiful tree is commonly cultivated : it grows to the height of from fifteen to forty feet, and is to be found in most Native gardens. The trunk is very slender, but of the same size throughout, and requires to have either matting or straw tied round it to prevent its splitting from the dry winds ; when which happens it immediately decays. It flowers at all seasons ; and the seed when ripe should be sown, if young plants are required, at about eighteen inches apart. These palms form a very striking appearance in gardens when mixed with the cypress alternately. The black pepper vine is trained up it on the Malabar Coast.

BERBERRY. BERBERIS ASIATICA.—This tree is found in the hills of Nepal, and most probably on the Neilgherries. I met with it first in Deyrah Dhoon. There is a large and small blue fruited sort, as well as the red. I have never seen it in the Deccan. The trees have blossomed in the Botanical Garden at Calcutta.

Bhere Fruit. Ziziphus Jujuba.—This is a common wild fruit tree, and grows in almost every jungle. The fruit is astringent, but sometimes of a pleasant subacid flavor—eaten chiefly by wild animals, and the poorer classes. It is more especially cultivated by Mussulmans round their tombs. The fruit is oblong, containing a stone, and bears twice in the year, the best crop about January : after this is done, the tree is pruned, by nearly cutting off all the smaller branches. A second crop succeeds on the new wood in the rains, but, from being full of maggots, is not eatable : even in the cold weather very few of the fruit are free from this insect. The natives pretend that they have a remedy, which prevents the fruit from being attacked, but I have never known it succeed. The flavor is somewhat of a fresh apple, and when large and fine is by no means to be despised. I have succeeded best by budding from a good tree on a common stock raised from seed. It will bear well in two or three years, but requires care and watering at first. A fine gumlac is produced from this tree ; the cocoon of the wild silk worm is often found attached to it.

Bilimbi, Averrhoa Carambola. Bilimbi.—This tree is very common, and bears small lateral pink flowers during the rains. The fruit is angled, and there are two sorts—sweet, and acid ; the former is much the smallest of the two, and seldom exceeds a couple of inches in length ; the acid sort are much larger : they are both used for jellies and tarts. The tree is easily produced from ripe seed, and will grow in any tolerably good soil. Two crops during the year may be procured by watering the tree.

Blackberry. Rubus Lasiocarpus.—Now cultivated generally in the Deccan, and first believed to have been brought from the Mysore Hills. It grows easily from seed ; a few of the ripe fruit rubbed on a sheet of paper, and dried in the sun, will enable you to forward the seed to friends at any distance. (The same by strawberry.) The plants should never be nearer than four or five feet, and may be cut down at the commencement of the rains, when they will throw out fresh shoots, and bear fruit in abundance. As it requires little care, and only an occasional supply of water, this bramble forms a very perfect and secure hedge to a kitchen garden. The finest fruit is very inferior to a common raspberry.

Bread Fruit Tree. Artocarpus Incisa.—This tree grows to a tolerable large size in Bombay, and also is to be met with in some few parts of the Deccan. It bears a fruit the size of a large orange or small pumblenose, with a muricated rind. It seldom ripens in Bombay, the fruit falling off in the cold season. Like the jack, it bears fruit both on the branches and roots, which also afford a thick milky juice, convertible into bird-lime. The fruit, cut into slices and fried, has something the flavor of a sweet potatoe dressed in a similar manner. It will grow from cuttings, and requires a light soil, with care and watering at first. There are several species, but I have only met with one.

Bullock's Heart. Annona Reticulata. N. Ram-phul.—This tree grows to a large size. The fruit is so called from its resemblance to the heart of the animal. The color is a dark brownish red. When ripe, it is a soft, sweetish, pulpy fruit, but has not the fine flavor of the custard apple. It is ripe from November to June, and not much esteemed by Europeans.

CASHEWNUT. ANACARDIUM OCCIDENTALEE. *Hind.* KAJOO.—This tree grows wild, to a large size, in many parts of the Deccan, and is found in Native gardens as well as European. It is very ornamental when in leaf, bearing sweet-smelling flowers, succeeded by a pear-shaped fruit of a yellow and red colour, which is eaten by the poorer class. The nut hangs at the end of the fruit outside; and is of a kidney shape. Between a double shell, covering the kernel, is a very acrid juice, which, if applied to the skin, or inadvertently to the lips, immediately raises a blister. The juice is sometimes used for marking linen, as it is impossible to wash it out. The milky juice from the tree will also stain linen a dark brown colour. The kernel when roasted is very sweet and pleasant, but is considered rather astringent. In the West Indies the fruit or apple is bruised, and a juice expressed from it and fermented, which produces a sort of wine; and if distilled, a spirit is drawn from it, which makes excellent punch. The gum that exudes from this tree is valuable, from its resemblance to gum Arabic.

CASSADA. JATROPHA MANIHOT. TAPIOCA PLANT.—This shrub has something the appearance of the Castor oil plant. It is of a very easy culture: the branches falling down, strike immediately, and seem to grow in any soil—a light one is preferable. The roots grow to a large size, and may be eaten either boiled or roasted, and a very fine nutritious flour can be prepared from it, precisely in the same manner as Arrowroot, one spoonful of which will go as far as two of the latter substance in thickening milk, making panada or puddings, &c. The root in its raw state is poisonous.

CASSIA FISTULA.—A native of the country, and is perhaps when in blossom one of the most beautiful of the common jungle plants or trees. It grows from ten to thirty feet, and has a dark green leaf with long pods when ripe hanging from the branches. They contain a sweet pulpy juice, which is mildly cathartic, and well known to native practitioners. The pods vary in length from a foot to a foot and a half.

CASTOR OIL TREE. RICINIS COMMUNIS. *Hind.* ARUNDEE.—This tree is so common all over the country, that any description of its culture is unnecessary, except that if any person wishes to grow it for use, I would recommend a good soil, and sufficient space between the plants to enable them to benefit both by the sun and air.

CARDAMOM. AMOMUM NUTAR. *Hind.* ILLACHE.—I believe this to be the only species found in the gardens of the Deccan. It never bears fruit, but is perhaps one of the most beautiful flowers we possess. It multiplies itself very fast by the roots, and in a short time takes up a large space, throwing out long branches with drooping panicles of flowers, appearing more like wax. Colors pink and white. It is a native of some of the Eastern Islands, and has never been known to give seed. The only flower I have ever seen approaching near it in beauty is one of the parasites blossoming in May at Mahabuleshwar.

CAPE GOOSEBERRY, OR BRAZIL. PHYSALIS PERUVIANA.—This plant grows luxuriantly in a good soil. The seed should be sown at the commencement of the rains, and planted out in rows after they are about six inches high, and at least

two feet apart, and at such a distance between as will enable the gardener to pass easily between each row. The plants may be grown either on a trellis or sticks, and should be carefully pruned. The young shoots bear the finest fruit, and if carefully attended to will bear almost all the year round, and the fruit will repay abundantly for any extra care bestowed upon it. It is hardly known to what a state of cultivation this apparently worthless fruit may be brought, simply from its easy culture, and yet we have not a fruit more useful for tarts, and even a dessert, that I know of, and it is really worth the attention of families to cultivate with care. It makes an excellent jam, or preserve, besides being a most wholesome fruit; and, if carefully attended to, the size which it will acquire is not to be at first imagined, after seeing the common growth without care or attention of the fruit itself. The bush should be every now and then carefully pruned, cutting out the old wood, as the new shoots provide the finest flavored fruit.

CHAMBOOLEE. BAUHINEA RACEMOSA.—This is a magnificent creeper, native of all parts of India. The trunk is as thick as a man's thigh. In a few years it grows over the tallest forest tree. The leaves are used for thatching, and lining baskets; the shoots are always covered with a soft down; and the seeds, which are found within the legume, vary from eight to twelve. They are eaten raw when ripe (and the taste is similar to the cashew nut): they are about an inch in diameter.

CHERRY. PRUNUS CERASUS.—I have never seen this tree but in the hills north of Deyrah Dhoon, and then in the wild state, producing a common black cherry, fit only for preserves.

CHINA BOX. MURRAYA EXOTICA.—This is a beautiful dark green ornamental shrub. Grows easily from layers or cuttings; flowers white, and is very fragrant in the evening. Introduced from China, and found now in almost all the gardens.

CHIRONGIE. BUCHANANIA LATIFOLIA.—This is a jungle tree, flowering after the rains. It bears fruit about the size of a small cherry, in long branches, color of a darkish purple: the kernels, or seed, which is covered with a double shell, after being prepared by the natives, are sold in the bazaar four or five pounds for a rupee: they possess the flavor of almonds, and are used as such by the native confectioners. A very fine oil might be expressed from the seed. The method of preparing them by the Bheels is this: the fruit when ripe in May is gathered, then soaked in water to soften the outer pulp, when it is washed and rubbed off by the hands: the little nut is then dried in the sun, and afterwards broken between a common chuckee or stone-wheel, such as is used for grinding wheat: the kernels are then sifted and winnowed.

CINNAMON. LAURUS CINNAMOMUM.—This tree is rare in the Deccan. I have never seen but one. I believe some are to be found in the island of Bombay.

CLEARING NUT. STRYCHNOS POTATORUM. *Hind.* NIRMULEE.—This is a middle sized tree; grows in various parts of the Deccan,—flowers in March and April, of a greenish yellow colour. The ripe seed are used by the natives for clearing water, by merely rubbing the inside of a vessel with it, then allowing the water to settle, when all its impurities fall to the bottom. As this seed can often

be obtained when alum cannot, I mention this circumstance, with its Hindoostanee name.

CLITORIS, BLUE AND WHITE. CLITORIA TERNATA.—This is a climbing plant, in flower almost the whole of the year round, and well adapted for covering trellis work. The flowers are blue and white.

CLOVE TREE. CARYOPHYLLUS AROMATICUS.—Introduced from the Eastern Islands, and grown in gardens in Bombay and Salsette.

CLOVE TREE, WILD. EUGENIA ACRIS.—A small tree; grows in Bombay, and the leaves have a pleasant smell when bruised.

COCOA CHOCOLATE NUT. THEOBROMA CACAO.

COCOANUT TREE. COCOS NUCIFFRA.—Is too well known to need description; but in the interior, where they may be scarce, it is only necessary to say that if cultivated they will readily grow; and fresh ripe fruit from the tree, if stript and deprived of its husk, and planted in a moist soil, soon sprouts. It requires care and watering for three or four years; after which it will grow of itself. The top sprouts of a cocoanut tree, or the cabbage as it is called, which is nothing more nor less than a large bud, if procured fresh, makes a most excellent pickle. It is white, and resembles a good almond in flavor.

COFFEE. COFFIA ARABICA.—In Poona, Mr Sundt, a most excellent practical gardener, has been rather successful, and thinks that it will succeed. About the neighbourhood of Aurungabad there are a few trees, and where it seems to thrive best is in a sheltered garden belonging to the Shah Saib; the garden is enclosed on all sides, and even in the dry weather is damp. There are in it a number of high cocoanut and suparie trees, which shelter it from the sun; and the whole, by buildings and situation, is protected from the dry winds which blow during the greater part of the year. In this garden there are a few trees, but I do not think that the best ever produced a seer of coffee annually. I have tried the plant in my own garden, under the shade of plantain and other trees, in every way, and after three years the best plants were not two feet high. Plants are easily raised from fresh seed, and when about six inches high, should be transplanted into a nursery bed, where they may remain until they are a foot and a half; then remove them to the situation where they are to remain for good, at the distance of about twelve feet apart. As they suffer much from hot winds, I recommend their being shaded with plantain trees. A rich moist soil is requisite, and they should be watered at least every third day.

CORAL PLANT. JATROPHA MULTIFIDA.—This shrub is common in almost all the gardens; where it is known by its resemblance to the substance from which it is named. The seed is sometimes eaten by children, but is of a deleterious nature, and an emetic should be immediately administered. I have known several instances of this occurring. The inspissated juice forms a substance like caoutchouc.

CORAL TREE. ERYTHRINA INDICA. *Hind.* PANGRRA.—A large tree, very common all over India; bears scarlet-colored flowers in March and April; grows readily from cuttings of any size, and is chiefly used for the support of grape vines. The leaves are said to form a good manure, and the shoots must be cut down from the top occasionally, to prevent its forming a large tree, which it would otherwise readily do. When used for training the pepper vine upon, the shade from the

tops shelters the plants from the heat of the sun. There is also a species of Pangree bearing a white flower.

CORIANDER. CORIANDRUM SATIVUM. NAT. DHUNNEA.—Seed used in curry stuff or powder, and leaves for making chatnee. Cultivated in all gardens, and used generally for domestic purposes. The leaves have a strong smell of bugs.

CROTON. CROTON TIGLIUM.—Found in many parts of the Deccan, and from the seed of which the strong purgative oil is produced.

CURRY PAK. BERGERA KOENIGII. NAT. KODIA NEEM.—This tree is cultivated in most gardens, the leaves of which are used in curries by the natives. It is very common on the Mahabuleshwar hills, but does not grow to any size there. It has very much the appearance of the neem.

CYPRESS. SUPRESSUS SEMPERVIRENS. *Hind.* SUROO.—This is a tall, elegant, and graceful tree, well adapted for border walks in a garden, being always green, and a favorite with the Natives. It grows easily, and is generally planted alternately with areca. Slips, if taken off before the commencement of the rains, and planted in beds shaded from the sun, take root; each slip should be six inches apart, and if common care is used, one fourth of the plants will strike and grow. After that they may be put out in nursery beds, at the distance of one foot from each other, until required for transplanting, where they are to remain.

CUSTARD APPLE. ANNONA SQUAMOSA.

DATE PALM. PHŒNIX DACTYLIFERA. KHUJOOR TREE.—There are several species of this palm over the Deccan, and I have known the fruit ripen at Hyderabad in a garden. It was sweet and pleasant, but not to be compared to the fruit brought from Bussorah. The seed taken from the imported fruit grows immediately, but it is a great chance if the tree will bear. At all events, good toddy can be procured from it if it fails, and it is worth while running the chance. Any out of the way spot of ground will answer for it to grow in.

DURIAN. DURIO ZEBINTHINUS.

EARTH-NUT. ARACHIS HYPOGEA. VILAITI MOONG.—This nut has the peculiar property of thrusting its legume into the earth to ripen the seed, and is easily cultivated by offsets, which take place in May or June. It is generally sold ready roasted by the natives in the bazaars. It requires a good soil and much water.

ELEPHANT APPLE OR WOOD APPLE. FERONIA ELEPHANTUM. *Hind.* KOOIT.—This is a large handsome tree, with pinnate leaves; bears a grey colored edible fruit, size of an orange, and contains a sweetish pulp, eaten with sugar, and sometimes made into chatnees. The scent is very unpleasant when dry. The cortex of the fruit is used by firework-makers. A very valuable gum is said to be procured from the tree.

EUPHORBIA NERIFOLIA.—It has a whitish dead appearance, with a five angled stem. It grows abundantly all over the rocky parts of the Deccan: it is also common in the Concan, and much used as a hedge plant.

ERUMBILII. FERRIOLA BIXIFOLIA.—This tree is common, and the fruit when ripe of a yellow color, the size of a large pea, round and smooth. The berries are generally esteemed and well tasted. Cultivated in gardens.

EXILE TREE, OR YELLOW FLOWERED OLEANDER.—This plant is common in the gardens of the Deccan; grows to the height of ten or twelve feet, with long tapering leaves; it is grown from seed, and blossoms throughout the year.

FALSA. GREWIA ASIATICA.—This shrub is generally cultivated in most fruit gardens; it bears a dark purple berry, when ripe, containing one or two small stones. The fruit is generally made into sherbet by pouring boiling water on it, and when cool, adding sugar to the taste. The plants are generally cut down almost to the ground in November, and even the leaves are burnt round the stalks, after which the roots are opened and manured, and watered occasionally, when new shoots spring out, and the fruit is borne near the axilla of each leaf; when of a dark purple, they are ripe and fit for use.

FIG. FICUS CARICA. *Hind.* UNJEER.—This tree bears fruit almost the whole year round. There are two varieties, the white and blue, cultivated in all the native gardens, the young trees producing the finest fruit. The Italians as the fruit begins to ripen prick each with a pin, putting a drop of sweet oil on the spot:—it is said that this causes an increase in the size of the fruit. The trees may be grown by layers and suckers at the commencement of the rains, and during the cold season. Cuttings strike easily in the course of six weeks. The finest fruit that I have seen grown has been on young trees of two years old, near which dead animal matter had been buried. The trees should be pruned annually, and the best way is to cut down the old branches that have borne fruit, leaving one or two buds that promise to throw out healthy shoots. The fruit when ripening must be protected from birds, either by nets or bags.

FIR TREE. CASUARINA MURICATA.—This is commonly called the fir tree in India, from its resemblance only. It is grown in all parts of the Deccan, and has a very handsome appearance amongst other trees. It has been introduced about twenty or twenty-five years, and will grow to the height of forty feet. The small cones abound with seed, and should, if required, be gathered just before ripening; you have only to place them in the sun, when the seed will fall out, and may be planted immediately in baskets, boxes, or beds of good loam.

GINGER. AMOMUM ZINZIBER.—Grows in all parts of India: it is generally cultivated in gardens, and sown about the commencement of the rains, and taken up in eight or nine months, though sometimes left in the ground for the following year. For mode of culture, see Vegetable list.

GRAPES. *Hind.* UNGOOR.* VITIS VINIFERA, LIN.—This fruit is cultivated in the greatest perfection in all parts of the Deccan, and the finest flavored are found in the gardens in the neighbourhood of Dowlatabad, about seven miles N.W. of Aurungabad. The mode of culture is as follows:—the trees are reared from slips taken at the time of first cutting after the rains, and when ready to be removed are put about seven or eight feet apart. They are for the first twelve months trained on dry sticks; after that, a large straight branch of the pangrah, with a fork left at the top to support the vine, is placed about twelve inches from it; if put at a greater distance it is apt to give a bend to the vine which is hurtful. The vine cannot be too straight, and the length of the prop should be about five feet.

* 4 sorts—The Hubshee, Sahiba, Fukkrie, and Bokerie or Abba.

The best soil is the white earth with which the natives build their houses, called pandree. They are not so fine if grown in the black soil, losing much of their flavor. The grey soil composed of the pandree and black, produces fine vines, but the fruit is not of so fine and rich a flavor as that grown in the pandree alone.

The vine requires watering, during the hot and cold season, every fourth day, after they have been cut, at the end of the rains, for the first crop, and which are mostly over by the end of March. As soon as the grapes are full and ripe, water should not be given to them.* The second cutting commences as soon as the first crop is over: they are full grown by the commencement of the rains, and in a very dry season sometimes come to perfection. The principal object in bringing forward this crop is to check a too luxuriant growth of the vine, which, if left to run, weakens the tree. Some gardeners, when the flowers appear for the second crop, pick them all off. In preparing for this crop, the vine roots are opened for four days, when the common manure from cattle is put to them, and water immediately given; one eye on the shoot at this time is only left.

When the vine, after the rains, is cut for the sweet crop, this method is pursued by the most experienced gardeners, and it is considered almost a secret: Two pounds of dried fish, four ounces of common salt, and a quarter of an ounce of assafœtida, are mixed up in sixteen quarts of butter milk and allowed to digest for three weeks; this quantity is sufficient for five trees. The vine is first cleaned of all its rugged and rough bark, † which harbours insects; it is then cut, leaving three or four eyes on each bough only, close to the stem. It is allowed then to drop four days: the earth is then opened round the roots, and cleared away. It then remains in this state for four more days, when the earth is put again to the roots, mixed with a proportion of the above compost. The vine is then left for three more days, when water is given to it; after which the watering ceases until it is in full blossom, when irrigation is continued every fourth day during the season. The vine is seldom ever grown upon trellis work, it being too expensive, and should be always exposed to the morning sun and free from shade. Protection from the N. W. wind is desirable.

The fruit of the vine is continually destroyed by blights during the month of November, which come on with the appearance of rain, but ends in nothing but the blossom and young fruit being withered. Smoking the trees with all the rubbish you can collect and burn to windward, is useful.

Guava, Red and White. Psidium Pyriferum. N. Jamb.—This tree grows in all parts of the Deccan, The fruit is both red and white, pear shaped and round: it is esteemed as a dessert fruit, but the scent when too ripe is unpleasantly powerful; it makes a most excellent jelly, and also is preserved in a similar man-

* Except in particular dry soils.

† And the leaves picked off about three weeks previous to cutting, which is done with a view of hardening the wood The natives, after the vine has been cut, and previous to the shooting of the buds, go round to each tree, holding a cloth under it, into which they shake off a small insect which is bred on the stem of the vine, in the interstices of the rough bark—(this is done morning and evening, and sometimes in the middle of the day.) Another method of destroying the insect is by passing a bunch of lighted tow, or hemp, suddenly over it: this singes the wings of the insects and they drop off, besides destroying any larvæ that may be attached to the tree, —and probably is the most effectual method.

ner to damson cheese at home. The fruit sometimes is as large as a common baking pear, and I have known one weigh half a pound. They have been brought to great perfection in some gardens, and the fruit of a large size divested almost of seed: this sort generally has a very rough knotty coat, and is more spongy and less firm than the other varieties. As plants continually grown from layers in time cease to produce seed, perhaps this variety has been so procured. It is easily increased by seed, and only requires a good soil to thrive in. The trees should be pruned once a year, otherwise the branches become very straggling. Good gun stocks are made from the old wood.

Henna Plant. Lawsonia Alba. *Hind.* Gool Mendie.—This plant will in some situations almost grow to a tree. It resembles the English privet, and is generally used as a hedge for borders, growing readily from cuttings, and has a very neat appearance if kept well trimmed. It bears a white flower something like May: there is also a very beautiful red variety, brought from China. The leaves of the gool mendie are in great request by native females: they pick the young fresh leaves, and with the juice color their nails of a reddish orange tinge. It is pounded up with catechu, and applied as a paste for a few hours.

Hibiscus Sabdariffa. Red Sorrel Plant.—This is the red sorrel plant of the West Indies, and introduced from the Mauritius. It is easily grown from seed, at the commencement of the rains, and when about six or eight inches high, should be planted out in beds or rows. The soil, if light and good, will cause the plant to thrive and form a bush four or five feet high; they should have at least in such soil a space between each of four feet. The fruit when ripe makes most excellent jellies and tarts. There is a white variety also grows to the same size, and the leaves are used, on account of their acidity, in curries by the natives. Bandycoots are very fond of the fruit, and destroy the whole bush to get at it.

Hog Plum. Spondius Mangifera. Amra.—This is a large tree; flowers at the commencement of the hot season, and the fruit when ripe is about the size of a small egg. It is eaten raw, pickled, put into curries, and made into tarts. The trunk of the tree gives out, during the hot weather, large quantities of juice, which hardens into a mild gum. It grows easily, and requires little care when once planted.

Honey Suckle. Lonicera Sempervirens.

Jack Tree. Artocarpus Integrifolia.—This grows to an immense size. The wood is used for furniture, and the fruit, which issues direct from the stalk or stem, has a rough coated appearance, hanging like a large green bag: the scent is very disagreeable. It is not in much request by Europeans, although the seed if roasted resemble a chesnut in flavor. The finest fruits sometimes grow on the roots, and will be found from the cracking of the earth above them. When this fruit tree is grown in native gardens, if the stem is forked they generally place a large stone between the branches: the reason I am unacquainted with.

Jamoon or Jambool. Eugenia Jambolania.—This is a large and handsome tree, flowers in February and March, and thrives in any good soil. The fruit of the best sort is as large as a common blue plum, which it resembles in appearance; it has a rough astringent flavor, and should be soaked in salt and water before eaten. The fresh stone if planted grows immediately.

JUSTICIA PICTA.—This is a very ornamental and handsome variegated shrub, bearing red flowers, having green leaves with large white spots fringed with green, and some varieties with red and dark red spots. The leaves are used for the decoration of the dessert after dinner, and other ornamental purposes: few leaves can be found on which some grotesque resemblance to the human countenance may not be fancied or traced.

JUNIPER. JUNIPERUS VIRGINIANA.

KIRNEE. MIMUSOPS HEXANDRA.—This tree grows to a large size, and is generally planted in groves: the fruit, which is about the size of a small olive, is of a yellow color when ripe, afte rthe rains, and contains a sweet clammy juice, eaten chiefly by the Natives.

KREAT. JUSTICIA PANICULATA.—A common herbaceous plant; grows wild, and also cultivated in gardens by the Natives, and much used in medicine. It yields a very strong bitter, and forms a principal ingredient in the French Drogur Amare.

KUMRUCK.—See Bilimbi.

KURUNDER. CARISSA CARANDOS.—A large thorny bush. Grows wild in most parts of the Deccan, bearing a dark blue colored berry when ripe, and sold in the bazaar. There is also a cultivated sort in gardens. The fruit when ripe is sometimes eaten by Europeans, but in the green state is made into tarts, jellies, and pickles: the jelly is considered inferior to none made of other Indian fruits. The wild sort is picked and sold by the natives for the same purpose.

LAUREL. CROTON VARIEGATUM.—A common ornamental shrub in gardens, easily raised from cuttings; there is also a willow leaf variety, equally beautiful and adapted for borders, or the flower garden.

LEAD WORT. PLUMBAGO. WHITE FLOWERED CHITRA.—The white flowered grows wild.

Rose-Colored Plumb. Lal Chitra.—Rose colored, in gardens common, and in flower throughout the year.

Blue P. Capensis.—A native of the Cape of Good Hope, now common in gardens: it is the prettiest of the whole family, and easily cultivated by layers, which root of themselves.

LEICHEE. SEYTALIA LITCHI.—This tree, originally from China, is an evergreen, and grows to a large size. The fruit is of a dark brown color, and contains a glutinous yellow sweet sort of pulp: it is not much prized—perhaps from its inferior quality to the Chinese fruit, which is much esteemed. The fruit ripens in March and April.

LEMON. CITRUS LIMONA. *Hind.* NEEMBOO.—There are so many varieties that they can hardly be described separately, being unnecessary. The large and small yield abundance of acid juice, and the tree is easily cultivated by layers, which soon throw out root fibres. The lime, which is of the smaller description, does not bear fruit so quickly as the larger sort, but if carefully pruned, and watered, will continue fruiting all the year round, and be very productive.

LIME, SWEET. MEETA NEEMBO.—This is a sweet variety, and grows to the size of a large orange. It is easily propagated by seed. The juice of the fruit is very grateful to persons with fever, although rather tasteless. It will grow also from cuttings and seed. The young shoots make a very good stock for orange grafts.

LOQUAT. ERIOBOTRYNA JAPONICA.—This tree is now introduced all over the Deccan, and bears fruit twice in the year. It is highly esteemed both for deserts and preserves. It is a native of China, but grows in great perfection in New South Wales. The finest fruit is produced at the second crop, at the end of the cold season, and requires protection day and night; from birds in the former, and flying foxes in the latter. The fruit is of a yellow color, with thin skin, a sweet acid pulp, and one or two seeds in the centre—sometimes more. The seeds grow easily. Proper attention does not seem to have been given to this fruit, as it appears to be capable of great improvement.

LIQUORICE PLANT. ABRUS PRECATORIUS.—Grows in the jungles: a common twining plant, with a woody stem; bears a small red berry, with a black spot on the top. These bright red looking beads are used as weights, under the name of vahl, or rutee. The root is used as stick liquorice, and therefore may be called Indian.

LOTEL. OSYRIS WIGHTIANA.—A small tree with twiggy erect-growing branches; in flower and fruit most of the year. The fruit when ripe is of the size of a small sloe, of a yellow color, with a mark on the top like a "blaberry." It is sweet and very pleasant when tasted, and is deservedly ranked amongst the wild fruits by Col. Sykes.

LUCERNE. MEDICAGO SATIVA.—Cultivated in the Deccan for feeding horses, also in Goozerat, where it is coming fast into use among the natives as green food for cattle. Propagated by seed: may be sown at any season, in beds or rows. It requires much water, and each plant should have five or six inches of space allowed between them. Cultivators generally cut it as it begins to blossom, when fresh shoots spring up, and a succession of crops is continued in this way for several months, manuring it occasionally.

MALABAR CREEPER. IPOMEA TUBEROSA.—An immense climbing plant, with woody stems; common in gardens; a native of Tropical America; leaves palmated, seven parted. Flowers yellow and showy, appear in Oct. and November. It is in general use for covering old walls, trellises &c., and for which purpose, from its exceeding rapid growth, it is well adapted.

MALABAR NIGHT SHADE. BASELLA RUBRA ET ALBA.—These are twining succulent plants, eaten and cultivated as spinage by the natives.

MARSH MALLOW, COMMON. ALTHÆA OFFICINALIS.—This plant grows wild all over the country, and is used for medicinal purposes as at home.

MANGOE. *Hind.* AM.—Is a highly esteemed fruit, and may be procured twice in the year, but I have never met with any trees bearing two crops in the Deccan, only in Bombay.

Propagation.—May easily be effected by seed and cuttings &c., but the process is slow, as a tree thus raised will not bear fruit before the 5th or 6th year, whereas those that are grafted produce in the 2d or 3d, although it is injurious to the tree to let it bear so early, and I therefore recommend that the blossoms should be

removed. Young grafts will sometimes, indeed very often, blossom the first season they are removed, and if allowed to bear fruit, it checks them for a length of time after. A mangoe graft may be applied at any time of the year : the stock must be kept continually moist by watering. When the graft and stock have become united, the former must be partially divided by a notch with a sharp knife : this may be done after six weeks have elapsed from the time of its first being united : a second cutting may be effected a fortnight later, and the complete removal from the parent tree at the expiration of nine or ten weeks. After this, remove the graft into the shade for a fortnight longer, when it may be put into the spot where it is to remain. A graft tree never attains the size of a seedling, neither will it continue to live or bear so long, and I doubt much if the seed of a graft mangoe would produce the same fruit, whereas a seedling often does so. The time that a seedling takes to produce fruit is the great objection to this mode of rearing trees : nevertheless a young tree of three years old might have one of its branches brought into blossom by ringing : this would enable the cultivator to judge if the tree was worth preserving or not. The finest flavored sorts of Mangoe grown in Western India, are the Alphonso, Raspberry, Mazagon, Doriah, and Malgrobah : this latter species is of a greenish tinge inside when ripe, and by far the largest of the whole, being three times the size of an Alphonso ; and it ripens the last.

Culture.—When the graft is planted out, it requires only a moderate proportion of care, clearing the ground of all weeds, and removing any buds that shew themselves. Within the space from the ground to where the first branches are to rise from, all superfluous and weak shoots should be removed, more particularly those from the centre of the tree, as also all branches that trail on the ground, unless required for grafting from. The tree is better for being pruned, and whenever the interior of the tree may contain superfluous branches, or when there is not sufficient room for the growth of the young and fruit-bearing shoots, a clear space must be provided,—and this can only be done by pruning. The best time for this operation is soon after the tree has done bearing fruit. No old and decayed wood should be allowed to remain, and great care be taken to remove on the first appearance the Borer, * should they indicate their presence by their appearance on the bark. When trees are old and have their bark injured, it must be all cleared away, and the parts covered with the composition recommended for that purpose.

I have been favoured with the following information from a friend at Aurungabad. Take slips from the healthy branch of a mangoe, at least two feet long, taking care to cut it one inch above the joint at the top and the same below the joint at the bottom. The cuttings will not all be equal, as in some branches the joints are short and in others long. The thickness of the slip is to be from three quarters to three inches in diameter. Half the length of the slip is to be slightly punctured with an awl, and then inserted into the ground to that depth (half of the slip) perfectly perpendicular; and then make a knob at the top of the slip with plain cowdung. The cuttings must be well watered in such a manner as to keep up an uninterrupted moisture in the ground; and moreover the cuttings are to be well shaded, and the coverings only to be removed by degrees as the plants

* See clearing Fruit Trees.

attain leaves and strength, and not to be transplanted on any account until the next monsoon. The slips begin to bud within a month generally, but sometimes take a much longer period. In all cases the punctures are indispensably necessary, to admit of root fibres being thrown out from them.

The tree and fruit may both be improved, if, during the cold season, the ground is dug all round the roots, and by the addition of a suitable quantity of good old manure. The seed will only grow when fresh, and seldom after six weeks. From twenty to twenty-four feet of space should be allowed between each tree if a graft: double the space is required for a seedling.

MANGOSTEEN. GARCINIA MANGOSTANA.—This tree has been introduced from Singapore into Bombay, but the fruit has never been brought to any perfection: probably if grafted on the Brindoa, which is common in the Concan, (and several trees are found in Bombay,) it might be much improved. I have been informed by a friend, that the Mangosteen ripens (and is equal to the Penang fruit) in the Company's spice gardens on the hills near Courtallum.

MANGOSTEEN, WILD. GARCINIA PURPUERA.—KOHUM BRINDOA.—This is an elegant tree, and found in the Concan along the Malabar Coast. At Goa the fruit is used for jellies and syrup: it is of a smooth dark brown color outside, and of a most beautiful purple in, and an agreeable flavor. The tree grows to thirty feet high, conical shape, with dark green shining leaves: there are several in Bombay,—two in a garden at the top of Nesbit-lane, Byculla.

MISTLETOE, INDIAN. VISCUM OPUNTOIDES.—A leafless parasite, common throughout the Deccan: grows equally on almost all old trees, and the Natives use the bark and berries for making bird-lime.

MILK HEDGE. EUPHORBIA TIRUCALLI. *Hind.* SENDH.—This plant is much used for making hedges, and from its continual green appearance is well adapted for the purpose. It grows best upon either a bank or wall of large stones laid loose for the purpose, having a good cover of earth upon them. Any cuttings will grow, but the plant if by itself will attain the height of twenty feet or more. The wood makes the best charcoal for gunpowder. A parasite of a yellow thread-like appearance, and leafless, (the Cassytha Filiformis) is very destructive to it, and will totally destroy a tree or the whole hedge in a short time if not removed.

MONKEY FRUIT TREE, OR BAOBAB. ADANSONIA DIGITATA.—Is a native of Senegal, and is said to be found in Egypt and Abyssinia. It is the largest known tree, with the trunk of an immense size close to the ground, (the diameter of which is sometimes as much as thirty feet) but fast tapering and of little height in proportion, seldom exceeding seventy-three feet, somewhat resembling a cone. Flowers, large and white, appear in May and June. On the sea coast the fishermen use the fruit as floats for their nets. The tree lives to a great age, whence it has been called "arbre de mille ans"; and Humbolt speaks of it as "the oldest organic monument of our planet." The roots are of a most extraordinary length: the tap root of a tree only twelve feet high has been known to have a tap root of 110 feet long. The foliage is sometimes so abundant as to conceal the vast proportion of the trunk, and the branches spread out drooping at the extremities to such a degree as entirely to conceal it; and the whole forms a nearly hemispherical mass of verdure from 140 to 150 feet in diameter, and sixty or seventy feet high. The

pulp of the fruit is slightly acid and agreeable, and frequently eaten: while the juice expressed from it, mixed with sugar, constitutes a drink which is valued as a specific in putrid and pestilential fevers. The trunk of the tree is subject to a particular disease owing to the attack of a species of fungus which vegetates in the woody part, and which, without changing its colour or appearance, destroys life and renders the part so attacked as soft as the pith of trees in general. Such trunks are hollowed (by the Africans) into chambers, and within them are suspended the dead bodies of those who are refused the honor of burial. There they become mummies, perfectly dry and well preserved, and are known by the name of guiriots.

MOORINGA. HORSE RADDISH TREE. MOORINGA HYPERANTHERA.—This tree is to be found in the jungles, as well as in gardens. The long pods when green are made into curries, and the young roots scraped, used as a substitute for our English horse raddish. An oil is obtained from the seed: it also yields a gum.

MULBERRY, WHITE, ALBA. RED, MORUS INDICA. BLACK, NIGRA.—These trees grow equally well in the Deccan, the white growing to a very large tree, shedding its leaves before the hot season. The red mulberry bears fruit in the rains, as well as the black. Silk worms may be fed on the young fresh leaves, although the leaves of the white are preferred. Grows from seed or cuttings.

MYRTLE. MYRTUS COMMUNIS. *Hind.* VILAYTEE MINDIE.—Very common in all the gardens; grows well by layers, and even cuttings. The shrub requires careful pruning, and after the rains all the leaves in which an insect deposits its larvæ must be removed, or it will lose its verdure and beauty by the destructiveness of the young caterpillars.

NETTLE. URTICA INTERRUPTA. BUCHHATA.—A large annual plant, grows during the rains. The whole plant is covered with stinging hairs, like the common nettle. It grows wild: there are several varieties.

NUTMEG. MYRISTICA MOSCHATA. *Hind.* JAFHUL.—I have only met with this tree in Bombay, where it has been introduced from the Eastward. The fruit ripens in the rains: it is the size of a large plum, with a green covering, and upon being opened, discovers a net-work of a dark red color surrounding the nut, which has a most beautiful appearance: this is the spice known as mace.

"The first care of the cultivator is to select ripe nuts and to set them at the distance of a foot apart in a rich soil, merely covering them very lightly with mould. They are to be protected from the heat of the sun, occasionally weeded, and watered in dry weather every other day. The seedlings may be expected to appear in from thirty to sixty days, and when four feet high, the healthiest and most luxuriant, consisting of three or four verticles, are to be removed in the commencement of the rains to the plantation, previously cleared of trees and underwood by grubing and burning their roots, and placed in holes dug for their reception at the distance of eighty feet from each other,—screening them from the heat of the sun, and violence of the winds. They must be watered every other day in sultry weather; manured once a year during the rains, and protected from the sun until they obtain the age of five years. The nutmeg tree is monœcious as well as dioecious, but no means of discovering the sexes, before the period of inflorescence, is known. Upon an average, the nutmeg tree fruits at the age of

seven years, and increases in produce till the fifteenth year, and is said to continue prolific for sixty or eighty years. Seven months in general elapse between the appearance of the blossom and the ripening of the fruit; and the produce of one bearing tree with another, under good cultivation, in the fifteenth year may be calculated at five pounds of nutmegs, and a pound and a quarter of mace. It bears all the year round, but more plentifully in some months than others, and generally yields more abundantly every other year. It is necessary that the roots of the trees during their growth should be kept well covered with mould, for they have a tendency to seek the surface. The growth of the lateral branches is to be alone encouraged, and all suckers, or dead and unproductive branches, are to be removed with the pruning knife, and the lower verticles lopped off, with the view of establishing an unimpeded circulation of air."—*Penang Gazette.*

OAK. QUERCUS.—These trees are to be seen growing only, I believe, at Mahabuleshwar in a garden belonging to a European residing at the station: they have been planted now some twelve or fourteen years, and form more a shrub than a tree: they are quite an exotic.

OLIVE, JULPIE. OLEA SATIVA.—This is cultivated in some of the upper parts of Bengal, but is of a very coarse description: they are (so I am informed) also pickled.

OLIVE, INDIAN. OLEA DIOICA. ATAJAM.—This tree is common: grows to a large size, and bears fruit about the size of the common Spanish olive. The stone is not by any means hard, and the fruit is eaten by the Natives in curries, and also pickled in salt and water: it is not much esteemed by Europeans.

OLEANDER, COMMON. NERIUM OLEANDER. *Hind.* KUNHER.—OLEANDER, DOUBLE RED AND WHITE.—This grows wild on the banks of rivers, bearing both white and red flowers: the root is poisonous. There are two other varieties, met with very commonly, bearing a double flower both red and white, and by budding the red color on the opposite one in several parts of the same stalk, a very pretty appearance may be given to the shrub. The yellow species is called the Exile—introduced I believe from America. Grows easily from cuttings.

OLIBANUM. BOSWELLIA THURIFERA. DUP SALAI.—This tree grows very common in most of the jungles near Candeish, and the Bheels gather the gum for sale; but as they make no distinction with gums from other trees, it has to be picked out of a mass, which gives no little trouble, and is the cause of much impurity.

OPUNTEA. OPUNTIA COCHINILLIFERA.—This plant is a native of the West Indies. The leaves are smooth and without prickles. It is used for feeding the cochineal insect, and is now in many of the gardens. The insect may be carried almost any distance on a leaf or two of this plant, but they soon destroy the plant they are bred upon, and during the rains, to preserve the insect, the plant must either be covered over, or boughs cut off, with the insect upon it, and hung up in a shed or room.

ORANGE. CITRUS AURANTIUM.—This tree is now extensively cultivated all over the Deccan. The finest sorts now are the cintra cowlah, and a small sweet orange which grows on a tree more like a creeper. The principal method of culture is by budding, the stocks generally being either seedlings or cuttings from

the sweet lime. The best cintra, with a thin close rind, is produced upon the seedling stock, and it is said that the fruit grown upon the sweet lime stock is generally loose and soft: this is very perceptible with some of the oranges. The best time for budding is in the cold season.

Orchis. Orchis Commelinefolia.—Root of two or more spindle-shaped succulent tubers; scape erect, about eighteen inches high; round, smooth-jointed; with cylindric sheathes, about half the length of the joints. Flowers white, scentless; appear about the middle of the rains. On pasture lands in the Southern Concan, several species are found on the hills.

Palm or Fan-Leafed Palmyra. Tar or Brab Tree. Borassus Flabilliformus.—This tree, the loftiest of its tribe, needs no description: it yields the juice known by the name of toddy. The fruit is also eaten.

Paneola Plum. Flacourtia Cataphracta.—This fruit is generally cultivated about Calcutta, and grows to the size of a common plum: it resembles a gooseberry in appearance, the skin thin and shining and of a purple appearance. The tree is not common on this side of India, and only one or two are to be found in Bombay. The fruit is not so large as I have seen in Calcutta, where it is common during the rains; it contains from ten to twelve seeds, and is both palatable and wholesome, and well worthy of more general cultivation. The tree grows to a large size.

Papaw Tree. Carica Papoya.—This tree is common in every garden; and the fruit, which is formed like a melon, grows in clusters one above the other, close to the stem. The small black seeds have the taste of watercress, and the fruit just before ripening makes an excellent tart, mixed with a portion of lime juice, sugar, and a few cloves,—resembling apple so nearly that it may be, and is, substituted for the sauce of the latter fruit. The tree grows easily from seed, and only requires a deep good soil. It is said that meat if hung under the tree becomes tender: the green fruit is also put with meat when boiling, for the same purpose.

Peach. Amygdalus Persica. *Hind.* Shuft alloo.—There are but three varieties of this fruit which I have met with in the Deccan—a large round white sort, of a delicious flavor; the flat China; and a small thin-skinned description, more resembling an apricot in appearance, and much harder than the other. The peach is easily cultivated by seed or layers. A seedling will throw out blossom in the second year, and be ten or twelve feet in height: it requires to be carefully pruned, wintered, and watered. No branches should be allowed to grow on the stem closer than three feet from the ground; all spurious and misplaced shoots should be rubbed off before gaining strength to exhaust unnecessarily the juices of the tree; and all distorted leaves, the work of insects, of parasitic plants, —mildew, &c.,—should be picked off and destroyed.

The kernels of the peach should be carefully removed from the shell, and in no ways injured if required for planting: they should be sown in small beds at the commencement of the rains, about eighteen inches apart, and as soon as they are fit for removal, a good sized ball of earth must be taken up with the roots, to prevent the root fibres from injury. All the buds around the stem had better be rubbed off by the fingers as far as is requisite, and a proper shape be given to the tree by cutting out all the superfluous spurs and their branches. The time for open-

ing the roots of the peach is after the close of the rains : remove the earth with care, so as not to injure the roots, for the space round the stem of three feet ; pull off all the leaves, and cease to water the tree until the blossom buds appear ; then cover up the roots with good loam mixed with old rotten manure ; water freely every third or fourth day until the fruit begins to ripen, when you must be guided by circumstances. It is necessary sometimes to thin the fruit, and also to put the peaches as they begin to ripen in bags, otherwise the birds will pick and destroy the fruit.

Peaches first come in about February, and with care may be continued until the rains commence, after which the excess of moisture received by the leaves and roots cause the fruit to swell and burst.

Pear. Pyrus Communis.—This tree is not common. I have met with a few at Hyderabad, bearing a tolerably large sized coarse fruit, but as the trees had been neglected, I can give little or no account of them : care perhaps might render them fit for baking, and stews. In the upper provinces of Bengal, I have seen the fruit of a large size, but very coarse and hard : indeed, all that could be said about them was that they were pears, and shewn accordingly.

Pine Apple. Bromelia Ananas.—Though growing so easily and without care in many parts of India, they require great attention to rear in the interior. At Hyderabad they seem to be quite acclimated, and produce as fine fruit as is ever seen on the coast.

Propagation.—Is performed by planting the tops or offsets : they will produce fruit in the second year.

Soil.—Should be, if procurable, rich red earth loam : the manure cannot be too strong—pigs' and pigeons' manure, mixed with goats', forms a most excellent compost.

Culture.—The plants, after removal from the nursery bed, should be put out in rows two feet asunder, and the rows the same distance apart, which will be found quite sufficient : the rows must be well worked and dug, adding the manure. The plant when large and promising to bear fruit, should immediately after the rains, in the latter end of October, be taken up, and the root, which will be nearly as long as the plant, having fibres at the end, may be cut off with a saw : supposing the root to be eighteen inches, one foot may be removed. It is round the edge of the cut root that root fibres spring, and the greater the number of these fibres the better chance of large and fine fruit. The superfluous leaves now near the cut end must also be pulled off, and then the plant is ready for being put into the rows again, which have been previously well manured ; and a good watering given. The plants must be watered after this regularly, only avoid if possible the water getting between the axilla of the leaves, as it makes them rot and decay in the centre. I found this the case with pines that I removed at the commencement of the rains : the plants not having any root suckers to nourish them, decayed in consequence of water remaining between the leaves. Plants that are put out in October and November will bear fruit in May and June. Some gardeners are in the habit, when the pine fruit is half grown, of cutting off the top, with a view to throw all the nourishment into the fruit, thereby increasing its size. This may be all very well with any early pines, but if they do not ripen before the rains set

in, the water lodging in the cut crown will cause it to decay like the plant : this might be prevented by having wax cloth covers of a cone shape to put over the fruit when rain is apprehended ; but I prefer letting the crowns remain. The stem producing the fruit should be removed when the fruit is cut, and new shoots encouraged. All offsets, when the plant is fruiting, must be removed, so as to give the fruit all the nourishment possible.

When trimming the plants, the extremities of the root which have been cut off (if planted in a nursery bed about eighteen inches asunder, the end an inch above the ground) will give fresh shoots, and form a good mursery of plants for the following season.

Pistachio. Pistacia Officinarum.—The nut of this tree is brought from Bussorah in great abundance, and I have succeeded in growing plants from it. The trees are male and female ; consequently should be grown in clusters or pairs. The leaves are deciduous, and for several months the trees look very bare. It is by no means a handsome plant. I first soaked the nuts in water, and when they split at the end, put them into boxes filled with earth : almost all grew, and were given away.

Plantain-leafed Palm. Urania Speciosa.—An elegant tree, native of Madagascar : spreads its leaves out like an open fan, forming a semicircular head. It has a short solid trunk, with leaves like a plantain ; and in a border, or at the end of a walk, when growing, forms a perfect screen : its peculiar appearance strikes a person immediately when seen for the first time. It bears a small fruit like the drupe of a plantain, which is of a blueish color. Rox says—" The plant has the property of rendering water or milk, either hot or cold, mucilaginous, without altering the taste, color, or smell, of the liquid in its former state." Butter-milk and water is often thickened with the juice of this plant, and then sold as an unadulterated article of the richest and best description.

Propagation.—By seed and suckers. Fifteen feet space should be allowed between each tree.

Plantain Banana. Musa Sapientum. *Hind.* Kilah.—There are several varieties of the Banana cultivated in the Deccan,—the large red green and the yellow. A small sort, which is supposed to be the real Banana of the West Indies, is perhaps the most luxuriant of the whole. The plants blossom at all seasons, and as soon as the drupe of fruit begins to ripen, which is known by some turning its color, it is cut and hung up to ripen in the house. The plant will not bear again, and may be cut down (otherwise it will perish of itself,) when the surrounding shoots grow up and blossom as the former. The plants are generally grown in beds or clusters in a good rich soil, when fine fruit is almost the sure return. In transplanting the shoots, if two or three feet high a portion of one half is generally cut off.

Plum, common. Prunus Domestica. Aloo.—This tree has been brought from the upper provinces of Bengal, and seems to be acclimated at Hyderabad. The fruit, which is of a dark purple when ripe, and about the size of a common bullace at home, has the flavor of that fruit : it does not seem to require wintering as the peach, but throws out its blossoms after the rains, and continues to blossom and bear fruit at the same time, and very abundantly. To secure fine fruit, the su-

perfluous green ones must be removed, by which means I have seen some very tolerable sized plums produced. I never succeeded in budding it on the peach, but it takes readily by approach on the peach stock, and may be removed in six weeks or two months from the parent stem.

POMEGRANATE. PUNICA GRANATUM. *Hind.* ANAR.—There are two varieties of this tree, bearing white and red fruit—both sweet, but much inferior to the dried brought from Persia and Bussorah to the Bombay market. The tree grows easily from seed, and large fine juicy fruit, where the soil is good, is often produced. There is a variety which is generally sour, used by the Natives for sherbet. The dried bark of the root is made into a decoction and given for worms.

PRICKLEY PEAR, OR OPUNTIA. CACTUS INDICUS.*—Thus is used as a hedge plant about gardens, and forms a strong useful fence, both against men and cattle, but harbours rats and other vermin, also snakes. The red fruit is used as a dye, and may also be eaten.

PUMBLENOSE, PUMMELO. CITRUS ACCUMANA. *Hind.* CHOCOTRU.—This is the largest of the Orange tribe, and is universally cultivated in all gardens: the varieties are red and white—the former preferred by some persons. The tree grows to a large size in a rich soil, and requires a good deal of pruning: the best time for doing this is when the crop of fruit is off. Fruit as fine as any I have ever met, was produced at Ellichpoor from the seed of a pumblenose brought from Bombay. The tree, when planted, should have a space of twelve feet all round it: the blossom is used for flavoring sweetmeat.

QUINCE. CYDONIA VULGARIS. BEH, OR SAFFERJAL.—This tree may have been probably introduced from China or Bengal, and is now to be met with in many gardens. It grows like the apple. The fruit is plentiful at Sattara, and I have met with it in Poonah. In other parts of the Deccan I have seen the tree in blossom, but the fruit did not set,—perhaps for want of proper treatment.

RASPBERRY. RUBUS PAUCIFLORUS.—I merely mention this fruit, as the common Blackberry is often mistaken for it. The raspberry I have never seen in any part of the Deccan: a wild plant is described by Graham as found at Mahabuleshwar.

RHUBARB, COMMON. RHEUM RHAPONTICUM.—This plant, though said to be a native of Asia, is only reared by great care, and even then the leaf stalks, which are used at home for tarts, attain a very slender size. The best time for sowing the seed is after the rains, in boxes or baskets: the soil should be light, with a sufficiency of manure to keep it moist. The young plants when large enough must be very carefully removed, with a ball of earth round the roots, and planted in beds a foot and a half apart: they must then be watered and shaded from the sun until looking strong and healthy. I found a few plants of mine improved by being covered over with a basket during the heat of the day and cold nights.

ROSE APPLE. EUGENIA JAMBOSA. GOOLAB JAMB.—This tree bears a light whitish yellow fruit, pear-shaped, with smooth skin, having a rose flavor: it is commonly cultivated in gardens about the coast. The only part of the Deccan where I have met with the fruit is Hyderabad. Many attempts have been made

* *Hind.* CHUPPUL SEYNDH.—From the resemblance the leaf bears to the common slipper.

by myself, and a friend, to introduce it elsewhere, but without success. It is easily propagated by seed, and will grow in a moist soil with only common care.

There are only I believe two sorts—red and whitish yellow—both possessing the same flavor: the red is called the Jambo Mallaca.

SAPOTA. ACHRAS SAPOTA.—This tree I have only met with in Bombay, but have seen the fruit in December, brought from Goa, where no doubt it was introduced from China. The fruit is the size of a fowl's egg, with a dark brown colored skin, and a yellowish pulp: the seed is large and soft, and about the size of the rose-apple.

SAGO PALM TREE. PHŒNIX FARINIFERA.—Is a dwarf species. The fruit ripens in May, and a species of sago is procured from the trunk. It is split and dried, then beat in wooden mortars until the farinacious parts are detached.

SAGO PALM. SAGUS SPINOSUS.—This tree is scarce, and only found in some of the gardens in Bombay, where it has been introduced from the Sumatra Islands. It is only grown as an exotic, and is a very beautiful species of palm, from its pinnate leaves. It is propagated by suckers from the roots of the old tree.

SALEP. ORCHIS MASCULA.—This plant is found on the Mahabuleshwar hills. It blossoms in June, and the roots are dug up and gathered after the rains in November or December. Another variety is found in the hills and jungles near Candeish, but possessing a very bitter principle. It is dug up by the Bheels, and sold when fresh for a few pice the seer. It requires a great deal of soaking and preparation before it can be deprived of its bitter quality. When dry, it is in appearance as fine as the Persian. It requires being boiled in at least six different waters, and then dried in the sun, when it will become perfectly sweet and fit for use.

SILK COTTON TREE. BOMBAX MALABARICUM. SAUR.—This is a large tree, the bark of an ash color, and armed with prickles. It flowers in the cold season: they are of a beautiful bright red color, cup shaped, and give the tree at a distance a flaming appearance. The flowers are white, grow upright, and contain a clear sweet watery juice of a morning, which is taken by the natives. The capsules when ripe contain a fine silk cotton, which is only useful, from its short staple, for pillows and other such purposes. The wood is very soft and light.

SINDEE TREE. PHŒNIX SYLVESTRIS.—This tree is very common all over India, growing everywhere. It flowers in the hot season. Toddy is extracted from it, and again in some parts ghoor or jageeri. Twelve pints of the juice give one pound of good powdered sugar, and the average of one tree is about seven or eight pounds annually: this is called date sugar.

SISSOO TREE. DALBERGIA SISSOO. SHEESHUM.—This is a most useful tree, growing in the jungles, and the wood is used principally, from its strength and natural bend, for native hackeries: when it can be procured long and straight, it makes good shafts for buggies—I have therefore mentioned it.

SANDALWOOD. SANTALUM ALBUM. SUNDEL SUFED, OR CHUNDUN.—This tree grows both in gardens and the jungles. It bears a small black berry, which if planted grows without any trouble. The wood is generally brought for sale in small logs seldom exceeding eighteen inches in length. It is unnecessary to describe its use.

Soap Berry tree. Sapindus Laurifolius.—This tree is very common in the Deccan about villages. The leaves have a shining appearance, and the flower stalk a soft brown downy look, bearing a small whitish flower. The berries are used for washing by the natives.

Singara Nut. Trapa Bispinosa.—This is a water plant, and is cultivated in many of the tanks for sale. There are two kinds,—one with a hard thick shell, and the other with only a soft skin. The former have when ripe the appearance of a bullock's head, from two sharp spear-like processes growing from it. The fruit when boiled resembles a chesnut, and is sold in the bazaar. The seed is also made into a coarse flour, and cakes are made from it; the thin-shelled kind both fish and tortoise feed upon. In some parts of the country, great care is taken to preserve the seed for planting the following season, which is done by treading it into the beds of tanks and such places. The fruit is fit to be taken at or about the close of the rains.

Soursop. Annona Muricata.—This tree I have only met with in Bombay. It grows to about the same size as the bullock's heart. The fruit is of a greenish color when ripe, and has a rough thorny appearance: the flavour is very peculiar, differing from the other varieties of the Anonacia: the scent resembles black currants; the seeds are similar to the custard-apple. The fruit ripens in March, and in the West Indies is considered very cooling in fevers. It bears only once a year.

Slipper Plant, or Thor. Euphorbia Tithymaloides.—This is a thick deep-green leafed plant: it grows about three feet high, but if kept trimmed may be used for a border to a flower parterre, for which purpose it is admirably adapted. It suffers nothing by cutting, and if occasionally watered is always green. It grows well from slips; bears a small pink flower, and can be kept at any height. It is sometimes called buckthorn.

Snake Fruit. Eleagnus Conferta. *Hind.* Amgool.—This is a large scandent shrub with silver-colored leaves beneath. Flowers twice a year, of a white color; and bears an oblong deep red fruit when ripe, but when green it is striped: it is of the size of a small gerkin, has an agreeable subacid flavour, and is eaten by the natives. Very common all over the country. It is said that snakes are fond of the ripe fruit as well as birds and monkeys.

Strawberry. Fragaria.—This plant multiplies itself from runners and suckers, the old plant, after it has ceased bearing, throwing them out. As soon as the rains have set in, these runners may be removed into a nursery bed, for their being more easily looked after, and should have the space of nine or ten inches allowed between them: they will throw out other runners, the whole of which may be separated and transplanted at the proper season.

Soil.—They thrive best in a light soil with good old stable and vegetable manure at first, and as soon as they shew a disposition to flower, may have old goats' or sheep's manure added around each plant, a couple of double handsful being sufficient.

Culture.—In no parts of the Deccan should the plants be put out for fruiting before the close of the rains, the latter part of September being quite early enough.

Suckers that I planted for experiment at the commencement of August, grew to very fine bushes, and did nothing for ten or twelve weeks but throw out suckers, which were continually removed, and after all fruited badly: the finest and most prolific crop were got from suckers put out in the beginning of October. Some strawberries were gathered in November from the plants put out in August, but they were so few as in no way to induce me to try the experiment again. Varieties can only be procured from seed; and to procure the seed, select the finest ripe fruit, rub it on a sheet of paper, and dry it. When the rains commence, soak the seed in water, reject all that float, the remainder sow in baskets in a light loam, when they will be fit to remove in about six weeks, and should be put in other baskets four or five inches apart, and taken care of until ready to be transplanted into beds, where they are to remain. As these plants throw out suckers very fast, they must be constantly looked after, and removed unless you have a scarcity of plants. They will commence bearing in six months from the time of sewing the seed.

You may as soon as the rains have ceased, put your suckers that have rooted into square beds, each not less than one foot apart, five in a row: this will give you twenty-five in each bed—as many as can be easily looked after and gathered without trampling on the bed and thereby injuring the plants. When the earth is of a clayey consistence, I have seen the strawberry cultivated on ridges. Some think this is a good plan, but I prefer the beds: however, it can be easily tried. It is sometimes necessary, in consequence of flooding the beds, to put tiles under the fruit to keep it clean, but it also attracts the notice of the birds: if straw or grass is used, then the chances are that white ants destroy your plants. This it is that makes some persons prefer the ridge system of growing, as they say the fruit is cleaner in consequence: all I know is, that fine fruit may be grown either ways; and if on ridges, the same distance must be allowed between the plants as in beds —and even in the latter the plants may be put on raised cones of earth. The common vegetable manure is all that is required at first until near flowering, when a handful or two of goats' or sheep's dung should be put round the plant, opening the earth and scraping it together. Water during the evening and very early of a morning.

Sugar Cane. Saccharum Officinarum.—Of all the varieties cultivated, the Otaheite seems now to have the preference, although I have seen in Berar cane looking as fine. The cane if it goes to seed is considered almost useless for sugar-making. A description of the mode of culture I consider unnecessary.

Star Apple. Chrysophyllum Acuminatum.—This tree grows to a large size, thirty feet or more, the branches round, and leaves having a ferruginous down upon them when young. The flower is of a pale yellow, and the fruit ripens in October, about the size of a large crab apple: the pulp is of a yellowish color and firm inside, the outer rind being of a dark brown. It requires no particular soil. There are several trees in the Residency garden at Hyderabad.

Tamarind. Tamarindum Indica. *Hind.* Imlee or Imbelee.—This tree is too well known to need any description here. The red tamarind, which is scarce, is the most valuable.

Tallow tree. Sapium Sebiforum.—This tree is not very common, and is only to be met with in a few gardens. It is an ornamental tree, and bears flowers

and fruit for a great part of the year together. The fruit is of a pear shape, yellow and red, which when ripe opens and displays two or three black seeds enveloped partially with a fatty-looking substance. This it is from which the Chinese extract the tallow and make into candles.

THORN APPLE. DATURA, ALBA ET NIGRA.—This common plant grows all over the Deccan. The black datura has frequently double flowers. The seed possesses poisonous narcotic properties.

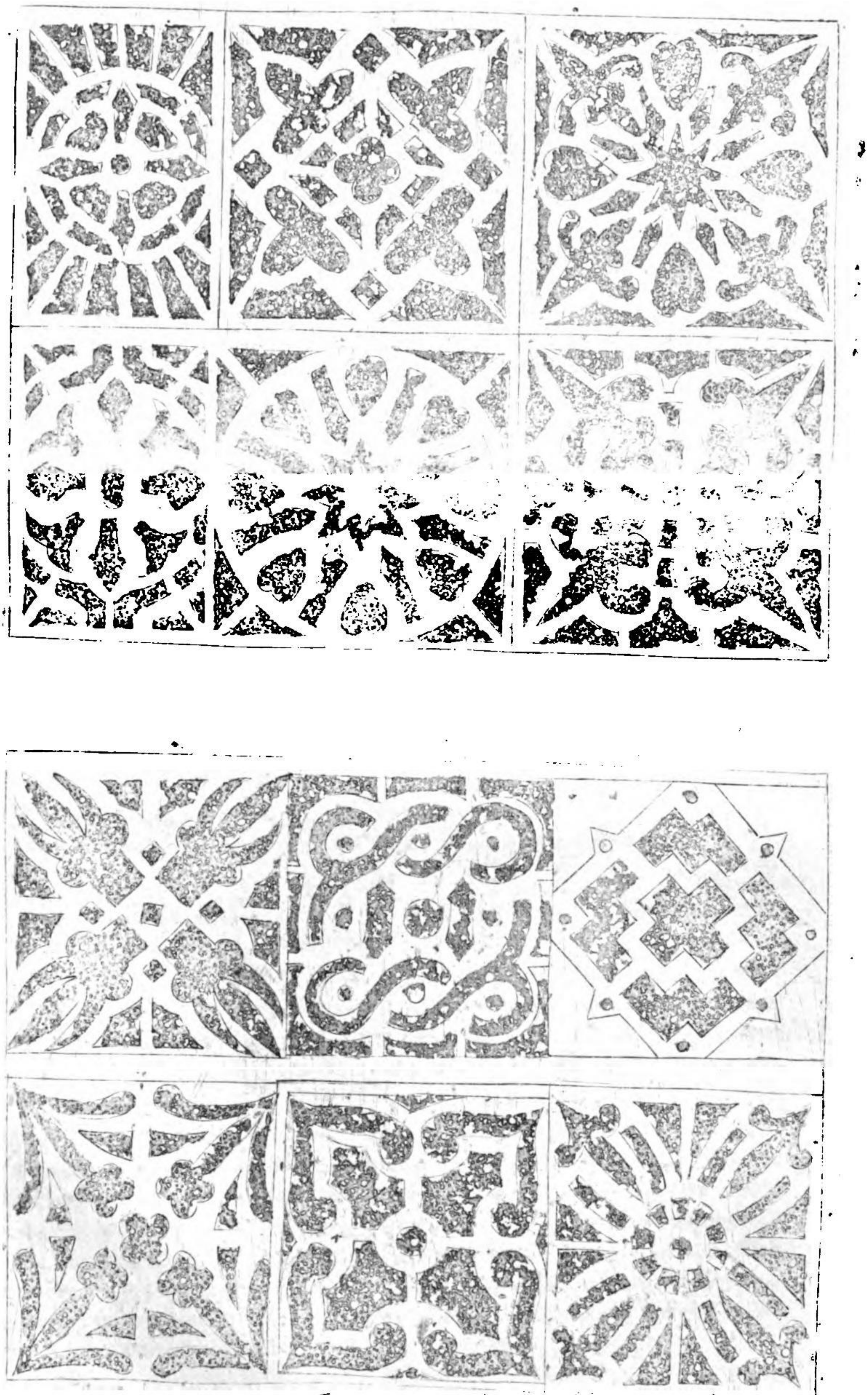
TOBACCO.—Common all over India.

VINE.—See Grape.

WAMPEE TREE. COOKIA PUNCTADA.—This bears a rough-skinned fruit in April and May, which grows in clusters, containing a sweetish acid juice, resembling black currant in flavor. It grows to a large tree, and has very dark green shining leaves. Rather ornamental, and requires very little care.

WALNUT. ALEURITES TRILOBA.—This species grows to a very great size, large leaves, three or five-lobed: bears a fruit resembling in appearance the English walnut: the kernel is sweet flavored, but is considered unwholesome. The Natives express an oil from it, and say that the fruit must be kept for one year, when it may be eaten. Very common about Hyderabad.

YUCCA. YUCCA GLORIOSA.—This beautiful plant flowers in the rains, and has a very showy appearance, being covered for two feet or more with a profusion of white blossoms.



Old Dutch Style

GARDENER'S CALENDAR FOR BOMBAY.

WRITTEN BY A MEMBER OF THE HORTICULTURAL SOCIETY.

INTRODUCTION.

To render Dr. Riddell's Manual more generally useful, it appears desirable that, without interfering with his remarks, it should have appended to it a few hints which would make it applicable to the climate of Bombay. The following are the results of the observations of one who can only boast of a little practical knowledge, and are founded upon very tolerable success. Others will most probably be able to give information on points which he has omitted, and correct any errors into which he has fallen.

It appears the best plan to follow the system adopted by Dr. Riddell, and to commence, as he does, with a Calendar.

MAY.

The remarks and advice in the Manual are equally adapted to this climate. But little can be done in the garden beyond breaking up the soil and collecting manure: on light and poor soils, the dry mud from the bottoms of tanks may be spread with advantage. Dry leaves and grass may be collected and spread on the beds, and burnt a week or two before the rains set in, for manure.

JUNE.

But little more can be done than in the previous month. After the first rain has fallen, the growth of weeds is so rapid that constant attention is required to prevent the soil being impoverished by them. The best way to get rid of weeds, and roots of grass, is by trenching the soil two spades depth, and turning it over previous to burning; or after the first fall of rain, when the ground has become well softened. The Doub or Hureeala grass roots (Argrostis Lininus) are the most troublesome.

At the commencement of this month you may put down beans, white and black; cucumber, gourds of sorts, Jerusalem artichoke, and sweet potatoe. It is generally best to wait until the first heavy burst of the monsoon is over, in July, before transplanting all sorts of Europe vegetables, from turnips to lettuce and radish, for heavy continual rain is usually detrimental to the young plants. The climbers may be sown. Turnips, onions, tomata in baskets, and also nole-cole, cabbage of sorts, vegetable marrow, parsley, lettuce, and radish, for early sallading, and most native vegetables.

JULY.

This is generally the month in which the rain is heaviest. The use of the plough when practicable will be of great assistance in checking the weeds. It is

of importance to ascertain beforehand whether your seeds be good, by putting them into water before sowing; such as are light, and float on the surface, are to be rejected. Vegetable seeds may be sown in boxes and baskets, but not too thickly; they must be carefully sheltered from the weather, and require great care. The young leaf must be examined every morning, and cleared of all insects, particularly of a small slug or caterpillar: the transplanting must be frequent, and the young plants allowed room. Cauliflower, broccoli, cabbage, celery, and beet, may be thus brought forward, till at the season *(August)* for planting out they may have attained four to six inches high—a sufficient size to be put each in a small basket, from which the plant can be removed without disturbing the root, and an early crop secured.

Put down beet, lettuce, cabbage, turnips, nole-cole, asparagus, beans of sorts, spinage, country gooseberry, and tomata. It being sometimes difficult to get beans to germinate readily, they should be steeped in soft water for twenty-four hours previous to sowing, which will effectually remedy this difficulty.

AUGUST.

Plants of the cabbage tribe that have been grown in boxes or baskets will now require great attention, both in daily picking off insects and protecting them from heavy rains. A species of caterpillar, dark in colour—some smooth and some hairy—have been found most destructive in this month. A solution of tobacco, lime, and wood-ashes, effectuallydestroys them.—Continue to sow lettuce, plant out celery, country gooseberry, tomata, brinjals, cucumber, vegetable marrow, and parsley.

In sheltered spots and light soils, lettuces may be brought to a very fair state of perfection.

SEPTEMBER.

After Cocoanut Day, which usually falls in the end of August, the heavy rains generally cease, and you have passing showers with occasional sunshine. After transplanting, care should be taken to shade the young plants during the day with the shade-baskets, and to preserve them from the wet by earthing up.

The ground should now be well manured and prepared for the young plants, which may be set as soon as the rains hold off. This may be expected early in the month, but as the heat is great, care must be taken that they do not grow too luxuriantly: to this, frequent transplantation is the most effectual check. For cauliflowers the soil can hardly be too rich: when the plant attains strength, dried fish pounded and applied to the roots will be found beneficial, and water must be liberally supplied and the beds frequently flooded. Trenches, eighteen inches deep and twelve or fifteen wide, should be dug for celery, and the young plants put in about eight inches apart. The soil should be rich but light, and in positions where the black earth prevails, a mixture of sand will be found advantageous. Towards the end of this month and the next, transplanting must continue.

Sow peas if in a favourable situation, artichoke, beans, carrots, spinach, cabbage, cauliflower, lettuce of sorts, and early sallading: attend to strawberry plants, and prune all your fruit trees moderately.

Strawberry runners, which, during the heavy period of the monsoon have been placed in baskets, should also be now planted out in beds. These, as well as the

vegetables, will require shelter from the sun as they attain strength: additional manure must be applied, and they should be flooded at least every other day. When they begin to produce blossom, straw or hay should be placed under them: it keeps the ground moist, and preserves the fruit from being injured by the water. Towards the middle of the month open the roots of your rose bushes, and do not water them for ten or fifteen days; cut the plants to within a foot of the ground, and at the expiration of the above period cover the roots well with rich manure and fish, and water abundantly. Lettuce plants should now be put out, and the first crop of Potatoes planted. The best plan seems to be to place the cuttings, which should each have at least two eyes, on the sides of ridges; these should be about a foot apart, leaving a trench between them for watering, which should not be more frequent than every third day; the root requires three months to bring it to perfection, but in six weeks young potatoes may be dug for daily use. The best soil is the red earth or sand. They will grow to equal size in the black, but the produce is generally inferior in flavour. Where water is abundant, Lucerne may be sown in beds of convenient size. Parsley, turnips, spinach, radish, &c., may be sown in beds, and the first crop of peas; these may be either planted in rows or circles; in the latter way they occupy more space, but are more ornamental, and the produce is more easily gathered. They should be sheltered from the North-Westerly winds as much as possible, and well watered. In planting the peas in circles, the best plan is to put the seeds in two concentric circles about three or four inches apart, the outer circle being from three to five feet in diameter, according to the height to which the plant is expected to grow,—strong supporting sticks being placed in the centre. As it requires full two months to bring them to perfection, no seed should be put in after December.

The system to be adopted from this period throughout the cold season, is so similar to that pointed out by Dr Riddell, that it is unnecessary to add anything to his instructions.

The season for trimming Vines is the latter end of September and beginning of October, and the system of treatment pointed out in the Manual has been successfully followed in Bombay: great care must be taken in smoking the vines every evening about sunset while in blossom, and till the fruit is well set. After the smoking, the stem should be gently tapped with a stick, to shake off a small insect which is most destructive to the blossom. With respect to Dr Riddell's directions for the culture of the different vegetables and trees he enumerates, there can be little added; and his instructions regarding budding, grafting, and enarching, cannot be too closely attended to.

Now plant out Strawberry runners, also your cabbage plants: sow celery, beet, spinach, onions, salsify, and sweet herbs, also turnips and carrots. Towards the end of the month, trim your roses and get ground ready for potatoes. Peas may be put down safely.

NOVEMBER.

Plant out all the cabbage species, York, drum-head, Savoy, red pickling do.; also cauliflower. Sow crops of peas, turnips, carrots, salsify, beet, spinach, radishes of sorts, onions, leeks, shallots, celery, lettuce, and endive.

DECEMBER.

Plant out cauliflowers, cabbages, peas, beans, nole-cole, lettuce, salsify, scorzenora, radishes, onions, leeks, tomata, carrots, and turnips.

JANUARY.

The same as last month, after which your vegetables will continue in perfection until the different crops are over; but radishes, sallads, and other such esculents, may be continued to be put down until the end of February.

GARDENER'S CALENDAR FOR THE DECCAN.

MAY.

This month is so hot and dry that very little can be expected from your garden, though much may be done in clearing away weeds, dead leaves, and plants, that are about and under your trees. Plough up your ground well for ensuing crops, and as the clods of earth become dry, have them knocked to pieces, and the weeds removed. Collect now your manure for after use.

Fruits in season are—mangoes, peaches, pumblenose, pomegranates, plantains, grapes, melons, oranges, pine-apples, a few strawberries, and apples.

VEGETABLES, EUROPEAN—are nearly out. The following are to be had, but not by any means in perfection :—cabbages, asparagus, artichokes, beet-root, carrots, red cabbages, lettuce, potatoes, and celery.

VEGETABLES, COUNTRY.—Cucumbers, brinjals, dill pussund, bulam-keira, kuckrie, peeaz root, tur cuckrie, umbarie ka bajee, chillies, and various others. Strawberries are not abundant, and can only be preserved with great care. In the part of the Deccan about Poona, pine-apples and grapes are brought into the market in abundance,—the latter chiefly grown at Sattara.

Asparagus beds may be opened and trimmed : if well watered, they produce fine heads towards the end of the month.

Obs.—Onions, if not taken up before, should now be stored, and when sorted, dried for a few hours in the sun : after that, remove them into baskets, or lay them on the ground in a dry place, secure from rats and other vermin.

Towards the latter end of this month, if the appearance of the season indicates an early setting in of the rains, then get ready boxes, or baskets, with light rich earth for sowing the following seeds: cabbage, nole-cole, celery, parsley, beet, lettuce, and sea-kale. If the seed is fresh and good, the cabbage will be up in five or six days. Great care is requisite both for watering and protecting the plants from birds, which at this season eat every sort of young green vegetable they can get at : covering the boxes or baskets with dry thorns is the most efficient method of protecting them. The boxes or baskets should for the first fortnight be kept under a shed or verandah, and from heavy rain.

In the garden you may, towards the latter end of the month, put down French beans, cucumbers, vegetable marrow, lettuce, peas, radishes, and various sorts of native vegetables, also Jerusalem artichokes.

Rain generally falls towards the latter end of the month, and the average at Aurungabad may be calculated at two inches. The thermometer ranges in the shade from 90 to 100 deg. The nights are mostly cool, as the hot winds cease soon after sunset.

JUNE.

In the early part of this month the rains generally commence, and much depends on the mildness of the season for the thrift of the garden. If your young plants, sown last month in boxes or baskets, are looking well, remove them into beds that have been a little raised and edged with tiles or bricks, so that the rain does not lodge: put each plant about four inches apart; protect them still with thorns, and examine them as often daily as you possibly can. A small fly settles on them during the evening and deposits its eggs, which are hatched in a few hours, when a small caterpillar is produced, hardly perceptible at first to the naked eye: in the course of a few days it has arrived at maturity, during which time it had been feeding, if left unmolested, upon the tenderest leaves of the cabbage plants. The centre of the sugar-loaf cabbage they seem most fond of; nole-cole next. This small caterpillar has the power of protecting itself from dust or water by spinning a thread from one edge of the minute leaf in which it is hatched to the other, thereby drawing them together; when it feeds in security. I think that I have observed that they cast a skin once during this stage, and, like the silk-worm, cease to feed for a time: when removed, they again feed voraciously and become quite green. If you shake the leaf and detach one, he immediately emits from his mouth a fine thread, by which he suspends himself, at the same time that he is connected with the spot to which he can and does draw himself up again for food. About the fifth day he ceases to feed, when he sets to work and spins a cocoon of silk over itself; in a few hours, about twenty-four, it has assumed a chrysalis state, and in three days after becomes a most beautiful little brownish golden-coloured fly, which I have since observed on the table-shades of an evening. It seems to hop more than fly, or rather makes strong bounds of at least a foot. As I have found the male and female together on the leaves, no doubt the female soon lays her eggs and then disappears. These observations were made by me, being desirous to trace the insect through all the stages. When I found that it had formed its cocoon, I placed it in a covered wineglass, and the little golden-winged fly was the result.

Fruits procurable are, mangoes, pumblenose, pines, melons—going out; plantains, pomegranates, a few oranges, and late peaches, if the rain has not been very heavy.

Europe Vegetables.—Beet-root, celery, asparagus, artichokes, and small salad.

Country Vegetables.—The same as last month.

Obs.—Sow peas, French-beans, and other runners; parsley in beds, where it is to remain; also spinage, turnips, turnip-radishes, and native vegetables.

You will find the small caterpillar very destructive to your young plants: look them over continually, and scatter wood-ashes from the kitchen over them; although this is not an effectual method of destroying them, it is useful. Carrots for an early crop may be sown on ridges, also onions. Beet, endive, and lettuce for early salading. If you find towards the end of the month any young shoots round the old celery, have them carefully taken up and planted in rows: they will in the course of eight weeks make an excellent addition to your vegetables. Towards the end of the month cucumber plants and French-beans should be well forward. If much rain has not fallen, keep them well irrigated by any means you possess. Potatoes for a first crop may be sown, but, except in *particular* situations I have seldom seen them thrive; for if there is too much rain, they run to stalk; and if too little, from the very great heat, they wither and dry. The potatoes produced are so small and few that it is almost labor thrown away. Weeds are now also very troublesome, and require to be removed.

The average of rain this month may be calculated at about four inches; the Thermometer in the shade from 86 to 92 deg.

JULY.

This month is excessively warm, and your plants will require much water if the rain has not fallen regularly, and also protection from the sun, though the cabbage plants should not have too much, and are better watered by the hand: be careful to earth up your peas and beans, which are now sufficiently forward to climb the sticks, and should be towards the latter end of the month in flower.

EUROPE VEGETABLES in season are—radishes, turnips, cabbage-sprouts, and nole-cole from old plants; lettuce and French-beans.

COUNTRY VEGETABLES.—Turnips, radishes, pumpkins, mathie ka bajee, coolfie, maut ka bajee, chooka, &c.

Obs.—Peas when about six inches high may be brought into blossom earlier, by having their tops nipped off about half an inch.

Fruit is now very scarce: plantains, jamoon, and a few oranges, to be had. Mangoes by the latter end of the month gone out. In Bombay, pines and pumblenose in abundance, also custard-apples and guavas. Sow carrots, pumpkins, vegetable marrow, artichokes, onions, peas, beans, turnip-radishes, &c., and all the native greens enumerated in another part of the work. Be careful to smoke well your orange plants morning and evening, by burning damp litter under, to windward of those that are bearing, to protect them from a fly or gnat very destructive to the young fruit. Rain this month about nine inches. Thermometer from 76 to 90 deg.

AUGUST.

The weather still very hot during the whole of this month, but as there is generally much rain, all vegetables grow fast. Those now coming, and in, season, are—

EUROPE VEGETABLES.—French-beans, peas, * cabbage-sprouts, spinage, celery, lettuce, turnips, and cucumbers.

NATIVE VEGETABLES of all sorts, gourds, chillies, radishes, &c.

* Peas sown the latter end of this month, and during the next, do not bear so abundantly; the stalks get mildewed in the latter end of the rains.

FRUITS.—Oranges, custard-apples, limes, figs. jamoon, plantains, pumblenose, pine-apples, &c.

Obs —Sow vegetable seeds as last month ; plant out your cabbages from the nursery beds, also beet and celery. Trim and cut blackberries; put down cuttings of every description required, shading them from the sun during the day by mats or otherwise, and take care that rain is never allowed to lodge in the beds. Weed all your plants carefully. earthing up such as require it ; and during the mornings and evenings burn all the rubbish you can collect, as directed last month for the orange trees. Apples begin now to blossom. Towards the end of the month, prepare your strawberry beds for putting down the first stock of runners.

The average rain this month is from nine to twelve inches. The thermometer as last.

SEPTEMBER.

The weather is still warm and close, the same as last month. Native vegetables are now brought into the market in great abundance ; and about Poona, some grapes, but green and only fit for tarts—these are from their second crop.

EUROPE VEGETABLES procurable are—nole-cole, peas, French-beans, white beet tops, spinage, radishes, lettuce, turnips, small carrots, Jerusalem artichokes, onions, asparagus, celery, parsley, and a few potatoes.

NATIVE VEGETABLES are—pumpkins, turnips, native greens of all descriptions, sweet potatoes, Indian corn, brinjals, kurrala, keira, and numerous other sorts.

FRUITS.—Oranges, pumblenose, guavas, plantains, papaw, mulberries, figs, rose-apples, sweet and sour limes, cocoanuts, loquats, pomegranates, roselle, white and red hybiscus, and custard-apples.

Obs.—Now plant out your strawberries from the nursery, selecting the first runners from the old plant. Sow the following seeds in boxes or baskets, for your cold season crop, as they can be better looked after than in beds, using the same precaution for their preservation as recommended in May :—cauliflower, broccoli, cabbage, nole-cole, &c.

In the garden you may put down potatoes, asparagus, artichoke, cucumbers, salad of every description, onions, beet—white and red, peas. beans, and all other kinds of runners ; scorzenora, leeks, cress, turnips, and carrots. Also plant out any of the above from the nursery, if ready, in beds where they are to remain. The latter end of this month is a good time for budding trees, such as apple, peach, orange, &c. ; also to prune your vines. Mulberry cuttings thrive remarkably well if put down.

Average of rain, five or six inches. Thermometer as last month, from 75 to 90 degrees.

OCTOBER.

The weather continues hot during the early part of this month, but about the 20th a change is very perceptible, and the first crop of vegetables, or rain crop as it may be called, are now going out.

EUROPEAN VEGETABLES in season are—peas, radishes, love-apples, beet—red and white, vegetable marrow, and Jerusalem artichokes.

COUNTRY VEGETABLES.—Pumpkins of every description, also native greens, carrots, irvia, brinjals, sweet potatoes, &c.

FRUITS.—The same as last month.

Obs.—Put down vegetables as directed for last month. Sow kidney-beans, parsnips, carrots, peas, potatoes, and all vegetable seed for the cold season. Attend particularly to your vines, open apple trees, &c. This is the best month for planting out strawberries.

The rain varies very much during this month; seldom any quantity falls—from two to three inches, when the monsoon may be considered over. Thermometer until the 20th or 25th from 75 to 84 deg.

NOVEMBER.

Now the cold season has set in, and your garden should be well stocked with young plants. The Europe vegetables which would not come to perfection before, if planted now will thrive well; such as broad-windsor and kidney-beans, and parsnips.

EUROPE VEGETABLES in season, the same as last month.

COUNTRY VEGETABLES.—Almost every description enumerated in the list.

Obs.—Plant out your cabbages, cauliflower, broccoli, celery, and beet.

Sow turnips—white and red, Cape carrots, and onions for stock. Look to your artichoke plants; have them well earthed up: remove weeds well from strawberry beds, and put out plants for the latest crop. Cape gooseberry and roselle are now in abundance, and fit for preserves. Open your peach trees. Blackberries coming in. Towards the end of the month your apples and peaches are in blossom. Put down potatoes; earth up the Jerusalem artichokes; cover the globular kind with ashes all over, to protect them from flies, which do great damage. Rain seldom falls this month, though the clouds are heavy and threatening, generally end in a blight. The grape-vines suffer most—those that have not been cut and opened until late, particularly.

DECEMBER.

In this delightful cool month your garden should be in the best and most promising condition, and the European vegetables well forward: and those now in season are—

EUROPE.—Savoy, sugar-loaf, and drum-head cabbages, (broccoli and cauliflower coming on); nole-cole, potatoes, beet-root, French-beans, peas, love-apples, Jerusalem artichokes, radishes, leeks, scorzenora, lettuce, carrots, asparagus, cucumber, water-cress, &c.

COUNTRY VEGETABLES.—Lussun, coolfie, chooka ka bajee, brinjals, umbarie, soe, pollok, &c. Fruits as last; oranges particularly fine.

Obs.—A fine crop of potatoes may be expected if sown as late as the 30th. Plant out onions for store, sow beet for a late stock, and put out the last of cabbage and broccoli plants. Bud any trees you require, and graft by approach: plant out cuttings that may have taken root in the nursery, and attend to your grapes. The common sort are, near the latter end of the month, brought in for sale, and sell when in full season from twelve to thirty seers, or more, for the rupee. Sugar-cane is now ripening.

JANUARY.

The weather continues fine, as last month, and your garden is now in its best condition : all vegetables, enumerated as coming forward last month, will be in perfection—the broad-windsor beans and kidney in blossom ; cauliflower in head.

EUROPE VEGETABLES.—Boor-cole, savoys, celery, beet, carrots, brocooli, broad-beans towards the end of the month.

COUNTRY VEGETABLES.—Are all the vegetable greens, brinjals, bendee, yams, sweet potatoe, &c.

FRUITS.—Apples, oranges, pumblenose, guavas, grapes, citron, plantains, figs, blackberry, Cape gooseberry, papaw, and strawberries : roselle going out.

Obs.—Peas are now going out. Attend well to the earthing up of artichokes * and potatoes; if the former are much infested with flies, sprinkle them with tobacco water. During this month occasional showers of rain fall. Thermometer about 57 deg.

FEBRUARY.

The weather now is becoming warmer, the dust annoying, the nights variable, and the garden shows great symptoms of change; vegetables droop during the day, and regular irrigation is required.

EUROPE VEGETABLES.—The same as last month. Artichokes, of the globular kind, are now coming in ; broad beans continue.

COUNTRY VEGETABLES.—Of almost every description, yams and sweet potatoes, in abundance.

FRUITS.—Towards the latter end of the month, a few early peaches. Strawberries in abundance ; the other fruits the same as last month.

Obs.—Now take up all your yams and Jerusalem artichokes for seed. Attend to the watering of fruit trees : put out any cabbage plants you may have remaining, as they will, during the hot winds in May, serve to be cut as sprouts.

The nights still continue cool, and sometimes the thermometer will be found as low as 64 deg. in the early part of the morning ; during the warmest part of the day 84 deg.

MARCH.

Now begins every appearance of hot weather, though the nights are cool. Much is not now to be expected from the garden. Peas are quite out, so are broad beans ; parsnips just coming in.

EUROPE VEGETABLES.—Cauliflower still continues good ; cabbages getting hard and coarse. Nole-cole may be had ; artichokes in abundance. Scorzenora, potatoes, endive, French-beans, leeks, celery, and lettuce, good.

NATIVE VEGETABLES.—Irvia, sweet potatoes, carrots, brinjals, and almost every other native produce for the bazaar.

FRUITS.—Grapes in perfection ; oranges getting scarce ; guavas, peaches, apples, figs, plantains.

* But in some parts of the Deccan, at Hyderabad particularly, the Artichokes sown in the latter end of May gave fruit in October, and crops continued until June in succession.

Obs.—By the latter end of this month, if the hot season is advanced, it will be necessary to take up your potatoes sown in December; but the longer you can keep them in the ground the better. During this month, showers continually fall. Be careful to attend to, and water. your fruit trees. Porcupines and other animals are very destructive in gardens at night time, owing to all the grain in the fields being now gathered in. Thermometer from 84 to 90 deg.

APRIL.

The hot weather has now decidedly set in. The vegetables in the garden, half an hour after sunrise, look in a drooping state, and regular irrigation is necessary.

EUROPE VEGETABLES now procurable, but by no means in perfection, are—cabbages, artichokes, asparagus, celery, beet-root, carrots, tomata, salading.

NATIVE VEGETABLES are—cucumbers, dill-pussund, kudoo, mathie, soe, pollok, kumruk, brinjal, gaja: &c.

FRUITS.—Grapes, peaches, strawberries, rose-apples, apples, oranges, pines, plantains, melons (mangoes just making their appearance towards the latter end of the month); besides many sorts of native fruits.

Obs.—Very little can be done in the garden now, as it is useless putting out plants. Constant irrigation is necessary for all vegetables, and the more they are sheltered from the hot winds the better. Ground may be ploughed and got ready for the ensuing rains. Now lay out your garden walks, as the mallies have not much to do. Asparagus beds will be in full perfection if attended to and looked after. The small kinds of tomata continue, and salad, if well sheltered by the shade of plantains, or other trees, may be preserved.

Rain occasionally falls this month. The thermometer in the shade 92 deg and upwards. No doing without tatties from the middle of the month.

INDEX OF EUROPE VEGETABLES.

ANISE. *Hind.* SONF.—Sown in a light soil after the rains, and allowed to remain where sown, thinning out the weaker plants.

ARTICHOKE.—There are four species—only two are cultivated for use. It has large pinnatified leaves, erect, and of about two or three feet long. From the centre arises a long stalk, which gives off branches, on the top of which is a large round scaly head composed of numerous oval scales enclosing the florits setting on a large fleshy base, which, with the fleshy part on the base of the scales, is the only part eaten: it is called the artichoke bottom.

The two sorts grown are, the French conical spine-leafed, and round Dutch globular-headed. The seed may be sown in June and continued during the rains; the soil should be light and of a good loamy description; the seed sown at least six inches apart. When they are in four or six leaves, they may be transplanted in rows, and in open situations and good soil, three or four feet asunder. The ground should be of a light consistence and well manured. Let the trenches be about six inches deep, and at least from one to two feet broad: they will require occasional irrigation if the weather is dry, after having been well watered by the hand. When first removed, at the latter end of the rains, and the plants have arrived at almost their full size, a small black fly collects upon them in the greatest abundance, and destroys the whole of the leaves. This also happens to plants raised from seed sown in October, or at the close of the rains. When the plants, in January, February, and March, have arrived at their full perfection, they may be propagated

from slips that grow on the side of the old plants, which wither and dry as soon as the fruit is ripe and gone to seed. Care must be taken in removing both plants and shoots, that a sufficient quantity of earth is taken up with the roots, so that the spongioles are uninjured. When they appear to have taken root well, let the ground occasionally be loosened round them, and the stalks well earthed up. The best means of preserving the plants from being destroyed by the fly is to cover the leaves well over with ashes from the kitchen, or sprinkle with tobacco water. The seed from Europe, the Cape, Persia, and Hindoostan, all grow well, but those that I have succeeded best with were from the upper provinces of Bengal: they were of the large globular kind, and from being acclimated, I thought they did not suffer so much from the fly as others. More than one head should not be allowed on each stalk: pick all the others off. If a piece of stick is run through the stalk, across under each head, I think that it tends to enlarge it. The seed may be collected whenever ripe, which is mostly in May or June. The largest and finest heads do not always give the most seed—often the reverse. Young artichoke shoots if blanched may be eaten as salad.

Asparagus.—The species are many, but only one is cultivated for use. The method of first raising the plants from seed, is either by broad-cast, in beds of six feet square, or in long beds of about two feet broad, where they are to remain. If sown in square beds, when the grass is about six or ten inches high, and begins to bear small flowers, it may then be transplanted, and must be carefully taken up with a sufficiency of earth attached to the roots, and planted in trenches at least six inches deep and eighteen broad. Between each trench should be a space of one foot or more. The plants may then be laid down in double rows in the trench prepared at six or eight inches asunder—perhaps a greater distance may be better. The roots must be carefully covered, and well watered. The beds cannot be of too rich and light a soil, and must be kept clear of weeds, and watered as occasion requires. When the asparagus is sufficiently strong to commence working the beds after the stalks have gone to seed, the watering should be discontinued, and the stalks allowed to dry and wither; then uncover carefully the roots, being cautious not to injure the crowns: cut or twist off the stalks, and cover up the crowns again with rich manure about two inches high; then turn over upon it the spare ground that has been left between the trenches. Thus you will have in the middle of the rows a water-course, which will serve to irrigate the plants below. The watering must now be continued daily if necessary, which will cause the plants to send shoots up through the loose soil above them, and, if well managed, the grass will be white and fine. Before putting down your plants in trenches, plenty of good manure should be well dug into them, so as to form a rich soil for the roots to strike in. After the grass has been cut, and the shoots are getting thin, cease working the beds and let them go to seed, when they may be again worked. You will seldom get more than two crops in the year from the same beds, therefore you should have them in succession. I do not know of any animal, except rats, destructive to the roots: flooding with water is the only remedy.

Basil. Sweet Borage.—Grows as a shrub, and is only used for seasonings with other sweet herbs.

Grows in all parts of India from seed, or slips, in any light soil. Is used chiefly for flavoring sherbet, &c.

Beans, Broad and Windsor.—Should be sown in the cold weather, in drills, the same as peas, each bean at six inches apart ; the rows sufficiently separated to admit a person to pass between them for picking, weeding, &c.

The best time in the Deccan for sowing is in November, and if the ground is light and well manured, there is no chance of failure. I would also recommend the seed to be changed every season. Rats and porcupines are very distructive to them.

Beans, French—White, Black, and Yellow.—These beans are runners and dwarfs; they should be sown in rows about two feet apart, and you may commence sowing them at the close of the hot winds. The dwarf white are preferable at the early part of the season, as they bear sooner than the other sort, which require sticks at least six feet high, and strong, so that they may stand the rain and wind ; you can continue to plant them until March with success. All that is necessary is not to put them too close, and to remove caterpillars that are found upon them during the months of July and August. These beans are very hardy, and grow well in almost any soil.

The Portuguese bean, or Chivaux de Frize, is cultivated like all other beans. Its pod has four fringed angles, the edges gagged : they are dressed like French beans.

All the other sorts are grown in the same manner.

Beet-Root, Red and White.—Is grown from seed, and thrives best in a light grey soil. The seed may be sown in the latter end of May, and transplanted in either rows or beds. This crop will not produce such large roots as those sown later, but with care some roots fit for salad may be forthcoming in September ; and I would advise the plants being grown on ridges during the rainy season. The leaves, when not too large, of both species, are used and eaten as spinage. Each plant should be at least a foot apart, and in transplanting them, care must be taken to draw the root up unbroken, and the hole in which they are put should with a dibble be made quite even, and the plant put in straight. It may be transplanted at any period of its growth, except when going to seed, and which all the early sown is apt to do. Fresh seed, if procurable, is to be preferred, though I have no doubt if seed grown in the Deccan were sent to another part of the country it would thrive well. Beet-root is always the finest for not being transplanted, and the soil cannot be too light, and of a rich old vegetable manure.

Boor-Cole.—Grows to great perfection ; the leaves are curled. The tops should be cut off when two feet high ; the sprouts being the only part fit for use. It is cultivated the same as cabbages, and may be had all the year round.

Broccoli.—For culture, see Cauliflower.

Cabbage.—I shall confine myself to two or three sorts—the drum-head, sugar-loaf, and savoy, as all the others require similar care and attention. You may sow the seed in the latter end of May in boxes, or baskets, shaded at first from the sun and kept continually moist. The advantage of sowing them thus early is, that the plants by the time the rains have set in are strong, and the leaves do not offer to the small fly, which settles upon them to lay its eggs, the nourishment necessary

for the young caterpillar when hatched. The plants, when about three inches high, should be pricked out into other boxes, about two inches apart, and lightly covered over with dry thorns to prevent sparrows and other small birds from eating them. When large enough to be transplanted into nursery beds, use the same precaution with regard to thorns; and lastly, place them where they are to to remain, in rows about eighteen inches apart, either on the top of the ridge, or in the hollow—the former method in the rains is to be preferred. The soil should be light and rich. In the cold season, the precaution of sowing the seed in boxes is unnecessary, as they grow very well in small beds sown broad-cast, and watered at first by the hand, after which, when removed, they thrive extremely well. If the seed is sown as late as January, you may raise a stock of plants, which come but to a small size, and if kept in the beds and sheltered from hot winds may be transplanted in the rains. They produce good sprouts for eating when other vegetables are scarce; as also the stalks of the old cabbages, of which, if towards the end of the rains the shoots be carefully stripped off, they may be planted, and a succession of cabbages be procured by this means. I have known this plan adopted for years: in fact, in my own garden, particularly the red cabbage I have cultivated in this way for many seasons.

Obs.—You cannot be too careful in examining your young plants twice or thrice a day in the early part of the season, and having all the caterpillars picked off or destroyed. Sugar-loaf cabbage and nole-cole are particularly infested with them. I found that sprinkling the young plants, after watering, with a little black pepper, caused the small green caterpillar to leave the plant immediately. Slugs and caterpillars have a great aversion to pounded turmeric.

Capsicum.* *Hind.* Mirchee.—This plant is so well known all over India as the large red pepper, that it is hardly necessary to describe the method of culture, which merely consists in sowing the seed broad-cast, and when the plants are about six inches high, to put them either in rows or beds eighteen inches apart. The soil should be rich. They require watering and being kept clear of weeds.

Carrots. *Hind.* Gajur.—This vegetable is so well known as to need little description. The two kinds in general use all over the Deccan are the red and yellow—(orange and lemon colour); they may be sown at the commencement of the rains, broad-cast, in beds of about six feet square, and should be thinned, having a space of six or eight inches breadth at least between each root: this distance is sufficient for your first crop, but those that are sown later should have at least six inches space allowed between each root. If you wish to preserve your carrots until the commencement of the rains, in the months of March and April cut off the green tops, and let the roots remain in the ground; this checks their growth, and I have by this means had good carrots until the middle of July. I found the yellow Cape to answer the best for preserving; the seed was not sown until January. They bear transplanting well, and may be sown with advantage in drills. The soil should be light and good: care must be taken, the same as in moving beet not to break the root.

Cardoon.—This resembles the artichoke, but grows much taller. The tender stalks and leaves when bleached are used for soups and salads, and are cultivated in the same manner as the artichoke.

* The Chinese produce the finest Capsicums I have ever met with.

CAULIFLOWER.—The seed should not be sown until the latter end of August, as it does not always head well: it requires the same care as the cabbage, and should be planted in a similar manner. Removing the plants occasionally prevents their quick growth, and I think if the roots, when taken up, were divided into halves, or quarters, before being put into the ground, that it would facilitate its going to head. The soil in which I have seen the finest heads grown was of a greyish description, and the plants had little water given to them. In England the market gardeners seldom water cauliflowers, and once in four days is amply sufficient in the Deccan: no injury will accrue even if watered seldomer. The white broccoli is, I am sure, often taken for the cauliflower in this country, and I have seen heads large enough to be divided into two dishes and then form a sufficiency to cover a dish in general use for vegetables. Broccoli, both red and white, should be cultivated in the same manner as cauliflower.

CELERY.—The seed may be put down at the commencement of the rains, and, like other plants at that season, is better for being first sown in boxes or baskets, for the convenience of removing under shelter if the weather is bad. When the plants are about two inches high they may be pricked out into other boxes or baskets, two inches apart, where they remain for the first four or five weeks; then remove into beds or rows: to the latter I give the preference at the early part of the season; after that put them into square beds of six feet, and about twelve inches apart. They then grow so close in the leaves that they protect each other's roots from the sun and keep the beds moist, besides being very readily blanched, merely requiring a couple of half circular tiles to be put around the stem, tied with string or matting; then earth up the sides, which completes the business. In four or five days you may commence cutting, and by transplanting the off-shoots, have a succession the whole year round. The plant is very hardy, and goes to seed without any difficulty.

CELERIAC.—Another variety of celery, and is to be managed precisely in the same manner. It seldom grows above eight inches, and mostly spreads upon the ground. The root of this only is eaten: it forms rather a large white bulb, nearly the size of a parsnip, and has an exceeding fine flavor. The root of the celeriac is oftener used for stews than eaten raw.

CHIVES.—A species of shallot. Propagated either by slips or dividing the roots: this may be done at any season, but best after the rains. Nine or ten inches of space must be allowed between each bulb.

CRESS.—It is to be sown thick in very narrow drills, about one inch deep and a few inches apart. It requires to be well watered, and is in season all the year round. It is only used for salading. The seed is sold in the bazaars, and known by the name of Hallam: it should be cut for use when two inches high.

CORIANDER. *Hind.* DHUNNIA, KOTMEER.—Grown in native gardens.

CUCUMBER, GREEN AND WHITE.—This vegetable is grown from seed at all seasons. The plants should never be too close. It thrives in all parts of India, and grows with much or little water; and being a creeper, if allowed to climb over sticks, or trellis work, is more out of the way of jackalls and porcupines, who are fond of the fruit. The natives grow them in their fields, in the cold season,

amongst grain of various sorts, and in the sandy beds of rivers during the hot weather.

Egg-Plant, or Brinjall. *Hind.* Binegun.—Grown commonly in the Native gardens, of which there are many varieties.

Endive, Curled and Flat-leafed.—The seed may be sown in the earliest part of the rains in beds or boxes; the plants when about two inches high should be pricked out into beds, or sown in drills. They should not be nearer than one foot, and when grown to their full size, must be tied up to bleach. If in the rains, it is requisite that the plants should be every now and then opened, to let off the water that may have collected inside the plants, otherwise they soon decay. The method adopted in England of placing a board on the plants for the purpose of bleaching, will not succeed here, as the white ants attack them, and the board stopping the free circulation of air, prevents their growth and causes decay immediately.

Fennel.—Grows in great abundance in all parts of India. It is often confounded with aniseed. It may be sown in beds, or rows, and does not require any particular care. It is a perennial, and dies as soon as it has given seed.

Garlic. *Hind.* Lussun.—This is common all over India, and may be grown from seed or roots—the latter method is most in practice. One of the bulbs is broken and the cloves taken out and planted in beds about four inches apart: no particular care is required save watering and keeping clear of weeds. When the leaves dry and wither, then take up the roots and preserve in a safe place.

Ginger. *Hind.* Adruck.—Is a native of India, and is sown at the commencement of the rains in beds of about six feet square, and in a rich cultivated soil. The planting consists in dividing part of the green root, which the natives first soak in a mixture of cow-dung and water; it is then planted about two inches deep and about one foot apart; it requires a great deal of water, and to be kept clear of weeds. When the stalks dry, the ginger may be taken up, although it it sometimes left in the ground for a couple of years. It is better for remaining twelve months, and must be watered during the dry season.

Horse Radish.—I have never seen the plant in India :* a substitute is the root of the mooringa scraped, which grows wild; and the pods, when young, are used as a vegetable, both boiled and in curries. The tree is easily propagated by seed, and only requires watering for a few months when first sown.

Jerusalem Artichoke.—This is a species of sun-flower, and is, I believe, a native of South America. It goes to seed generally in October and November, and may be raised from it, or by dividing the root, planting them the same as potatoes. They should be put down in January or February, and will require occasional watering until the rains, when they make their appearance. As the plants grow they must be well earthed up, and if very tall, may probably require to be supported with sticks. This vegetable is ripe as soon as the stalk withers, and the best method of preserving them is to let the roots remain in the ground, —that is, if the white ants and other insects do not attack them. If you are obliged to take them up, keep them in a safe place, in earth, watering them occasionally.

* I have since heard it is, and has been, grown in Candeish.

To sow them, put either a half or a whole one, at a foot distance, in rows, the same as potatoes, and attend to them in like manner.

LEEKS.—The seed may be sown at the commencement of the rains, or after, in beds, broad-cast. When about six inches high they require transplanting into large beds, or rows, at least one foot apart: they go to seed in the course of six months, and grow very well in all parts of the Deccan.

LEMON GRASS OR SWEET RUSH.—This is a fine aromatic grass, and flourishes well in any good soil. It is propagated by slips from the root, and only requires watering. It is used as an infusion.

LETTUCE.—There are various sorts: the most esteemed are the cabbage, red and brown cos-lettuce. For early salading the seed may be sown at the commencement of the rains, although neither are in perfection until the cold season. They are mostly raised in small beds and then transplanted into others at about one foot apart, or on ridges around other vegetables; they do not require any particular care. The ground should be light and rich, and when the plants are of a sufficient size they should be tied up; and this may be done with shreds of plantain-leaf or twine.

LOVE-APPLE, OR TOMATA.—The produce of South America—a genus of the same class as potatoes. There are two sorts, single and double: may be sown immediately the rains commence, in beds; afterwards transplanted in rows, two feet apart, and trailed upon sticks of a strong description. If the soil is good, they will grow to seven or eight feet in height. The double, which are the finest, if sown in June, ripen in October. The lower branches should be pruned, and a succession of crops may be kept up until April. The small single tomata, with a slight protection from the dry winds, will continue until the rains.

MARJORAM.—A native of India, and is very easily reared, in beds or pots, either by slips from the roots, or seed. It is used for flavoring ragauts, sauces, &c.

MELON.—The rock, green, and musk, (*Hind.* KKUR BOOZA) are all sown in the Deccan at the same time,—generally in beds of rivers where the soil is light and sandy. They are very seldom sown in gardens. The seed is put down in November, three or four together, with as rich manure as can be procured. The plants must not be close together—a distance of from six to eight feet is generally allowed. They come in about March, and continue until the rains. In Bombay they are in season the same time, and a second crop is grown during the rains: this is not the case in the Deccan. The water melon (*Hind.* TUR BOOZA) is also to be had at the same time, and grown in a similar manner. The seed should always be preserved from the finest and richest-flavored fruit, and is better for being three or four years old. The green melon I think the finest flavored, although many of the others are very good. I attribute the melons growing finer in the sandy beds of rivers to the temperature being more equal about the roots than it is in beds in the garden—especially during the night.

MINT. *Hind.* PODEENA.—There are three sorts, Spear-mint, Pepper-mint, and Penny Royal. The first is generally used for culinary purposes: it may be propagated by layers, or cuttings, or parting of the roots; it requires a moderate proportion of water. In the rains a small black caterpillar attacks the leaves, and

will destroy the whole bed if not removed by hand, or flooding the beds, when the insect becomes detached from the leaves, and is easily destroyed.

MOREL.—This species of Fungi is found at the latter end of the rains, and generally dug out of white ants' nests.

Obs.—The wholesome sorts of mushroom are readily distinguished by being of a pink or flesh color in the gills, changing to a darker color as they get older; they have also a peculiar sweet smell: and another criterion of their being edible is the outer skin pealing off easily.

MUSHROOM. *Hind.* KOODRUTTEE.—Commonly found all over the country during and after the rains.

MUSTARD. *Hind.* RAIE, EAST INDIA.—This is of two sorts, white and black: the former is generally cultivated for salad, and is grown in a similar manner to cress; the black mustard seed is used for sauces, pickles, and oil.

NASTURTIUM.—This is either grown from cuttings or seed, and merely requires to be protected from the hot winds to be in flower all the year round; it grows much better in beds than pots. The flower and leaf are eaten mixed with other salads, and the seeds when green are pickled.

NOLE-COLE.—Is a plant of the cabbage species, and must be sown exactly in the same manner recommended for cabbage, broccoli, &c. It comes in early, and remains in season until April. If watered during the hot weather and taken care of, it will, when the rains commence, throw out sprouts, and form other nole-cole on the old stalk, which may either be used, or slipped off and planted: they will not be so fine as those raised from seed, yet are fit for use.

ONIONS. *Hind.* PEEAZ.—This vegetable is common all over India, and is sown broad-cast. When about six inches high it is pricked out into beds six fingers' breadth apart: they are sown at almost all seasons of the year, and go to seed without difficulty.

ORACHE, OR MOUNTAIN SPINAGE.—Of these there are several varieties, commonly known as red and green sage—the leaves are slightly acid; both sorts are boiled as spinage, but the red is most esteemed.

Propagated by seed—no particular soil required.

PARSLEY.—Is cultivated from seed: may be sown in beds or rows, where it is to remain. The plants, when about two or three inches high, should be thinned, and a space of at least a foot left between each. It will, if watered and taken care of, continue all the year round. A good plan is occasionally to cut down the leaves to within four inches of the root, as it makes the parsley throw out young and fresh leaves. It bears transplanting well. Always give the preference to Europe seeds. The common parsley of the country is very insipid. The roots of parsley are much used in French cookery.

PARSNIPS.—This vegetable is very difficult to rear; as it it does not often happen that the seeds come up, they should be sown broad-cast in beds of a rich soil, and the plants, when of a sufficient size, carefully thinned, leaving a space of one foot between each plant, and removing all weeds. They may be transplanted, but it must be done with the same care as recommended for beet-root. The proper time for sowing the seed is the latter end of July, and they will come in

during March and April. It grows to seed freely, but the roots grown from it were by no means fine the second year.

PEAS. *Hind.* BUTTANA.—The large white, green, and brown, are now the common pea in the Deccan; the latter sort are boiled and eaten often in the shell. Peas may be sown in the beginning of June, and continued at pleasure until February, when the weather becomes too warm and the stalks dry up, although I have known peas to be had much later from the sheltered gardens in the city of Aurungabad. The method of sowing is very simple: they should not be too thin, or placed deeper in drills than two inches, and a space of three feet between the rows. I generally sow my first crop in double rows, with a space of a foot between: when they are ready to climb, I earth up both sides well, leaving room for the water to run in the middle. I then place good strong sticks in the centre of the rows, and on the outer side of each lay good old manure, after which little trouble is required. Keeping them free from weeds is of course essential, and if you wish to preserve the seed, take care and remove any of the plants that appear of a different kind when in blossom; also draw out all thin and bad looking plants, to prevent farina impregnating the good, and if this seed be the produce of the rain crop, you will find that if sown again in the cold weather they will be much finer and last longer than the seeds of the former season. I was led to observe this from seeds that had fallen and grown up of themselves. If you sow for late crops, I recommend their being put down in single rows, and the lines from east to west: this enables the sun to act upon the whole, and tends to prevent mildew from damp on the stalks. In growing crops that you do not intend to stick, it is advisable to put brush-wood on one side for them to creep over, and prevent much loss in seed from damp and otherwise.

POTATOES. *Hind.* ALOO.—This vegetable, now so generally cultivated all over the Deccan, was a few years ago confined to Surat and Seroor. The former was generally the finest, and could only be had during the cold season; but now the potatoes are grown all the year round: on the Neilgherry and Mahabuleshwar hills they are in abundance. They should be planted in rows about one foot apart, and five or six inches deep; the space between each row, if ground can be spared, eighteen inches, otherwise a foot. The ground should be light and loamy, and as little infested with white ants as possible. They can be sown at the commencement of the rains, but the spot should be selected where the water cannot lodge, and easily let off, which may be done by keeping the end of the channel between the ridges open. At this season plant your potatoes on the top of the ridges, and do not water them unless necessary, as too much water makes them run to stalk. If your ground has not been well ploughed previous to the rains setting in, and all the weeds destroyed, the chance is your crop will fail; but should you have your ground ready, take your potatoes, intended for seed, and cut them into pieces, taking care that each slice has at least two eyes in it; and as you cut the slices, whilst fresh, dip the cut side of each into wood-ashes, and let them dry well, which takes place in a few hours: this I think prevents the white ants' attack. Sow each slice from nine to twelve inches apart, and place by the side of each a small clove of garlic, which in some measure tends to prevent the attack of a large grub very destructive to the plant.

Obs.—Here I think I am in error with respect to the grub, as the insect's eggs must be in the manure when added to the soil, and I have little doubt but that if the manure was previously worked up with the soil two or three times during the hot season, and exposed to the heat of the sun, the eggs would be destroyed: or the same purpose might be effected with a little fresh lime. I am sure the caterpillar does not travel to the plant.

The finest crops in the Deccan are sown from the beginning of October to the latter end of December, and this last crop will be found the most productive. Fine crops of potatoes have been grown where hemp has been first sown, and when about two feet high ploughed up into the ground. If, when your potatoes are about flowering, you perceive any of the stalks wither, carefully open the earth and look for a grub, which you may be certain is feeding upon it—of course destroy it. When these grubs are very numerous, it is necessary to search all the drooping plants daily: my idea is, that the larvæ is brought with the manure, and is the deposit of a beetle—however, nothing can be done but destroying them. I have heard recommended a bag with a small quantity of assafœtida to be placed in the water-course, as a remedy, when the plants were being irrigated. Here again is another insect which deposits its egg on the stalk of the plant. In the rains a small caterpillar eats its way into the stalk above the ground, when the plant immediately droops: the remedy is to remove the whole. Be careful at all seasons to keep the stalks well earthed up, and let the potatoes have a moderate supply of water—of course the season must be your guide. I one year, at Kunhur, raised a very fine crop of potatoes during the rains, by sowing them on ridges, and only watered them at first in consequence of want of rain: they were sown in the beginning of July, and a few taken up in September (the latter end.) Some of the potatoes weighed from five to seven ounces, aud were equal to any I have seen grown on the hills.

In the latter end of August, by way of experiment, I tore off shoots from the lower end of the stalks, when they were abundant, and planted them in rows, the same distance as for seed; and in November, on taking them up, was gratified by finding four or five large potatoes produced by each stalk, the size of a duck egg. This plan I strongly recommend to those persons who may not be able to get fresh seed after the rains. I did not find that the rows of potatoes from which the slips were taken produced fewer potatoes in consequence, as I weighed the whole and kept a memorandum for my journal.

Pumpkin. *Hind.* Kuddoo—Red and White.—This vegetable grows in great abundance in all parts of the Deccan. It is much esteemed both by Europeans and natives. It is generally sown at the commencement of the rains, and requires no particular care; the soil should be light and good. When young, about the size of a goose egg, if cut and boiled, it will be found to resemble the artichoke-bottom dressed in the same way.

Purslane. Portulica Settiva and Oleracia. *Hind.* Chooleе.—Round stem, fleshy leaves, and slightly acid. It is used as an ingredient in salads. It is reared by seeds sown at the commencement of the rains, and will thrive in any soil.

RADISH. *Hind.* MOOLLEE.—This vegetable may be sown at the commencement of the rains, either in beds broad-cast, or on ridges of beds where other vegetables have been planted. I prefer the ridges in the rainy season, as I think they grow bettter. You may continue to sow them until February. The turnip-radishes are of various colours—white, red, Spanish black, and purple : also long white, red, and purple. The seed should be trodden in, or beaten down, and then a good watering given to them. When about three inches high, they must be carefully thinned, leaving at least a space of five fingers' breadth between each plant. They take from three to five weeks to come to perfection, and require a good share of watering. The seed pods are often used for pickles when green.

ROSE MARY.—This plant is an evergreen, and highly aromatic, and grown precisely the same as lavender or oyster-plant.

SAGE.—A perennial, native of the South of Europe; it grows in all the gardens, and is propagated by seed, layers, and slips, without any difficulty. It is used for seasoning.

SCORZENORA AND SALSIFY.*—This is a long white milky-juiced root. Grows without any difficulty after the rains. It is an annual from the south of Europe. It should be sown either in beds, broad-cast, or planted out in rows at a distance of a foot apart. The root when boiled and dressed is rather a delicate vegetable. It comes to perfection in three or four months.

SHALLOT. *Hind.* GUNDHUND.—Propagated the same as the chive.

SPINAGE.—The produce of what country unknown. It may be sown in the rains, but it succeeds best in the cold season: it should be sown in lines a foot apart, or in beds, broad-cast, lightly covered over. It requires a moderate share of irrigation. The native vegetable, called seo pollok, when boiled and dressed, very much resembles it.

SPINAGE, NEW ZEALAND.—Is a hardy annual, with fleshy leaves and numerous branches. As a spinage it is as valuable as the Orache. If watered, grows freely, and produces leaves in the hottest weather.

THYME. THYMUS VULGARIS. *Hind.* EEPAR.—Very delicate plant to rear. Is best performed by seed, but it may be increased by slips, and dividing the root. It requires a rich soil, and the space of six inches between each plant. Best grown in pots.

TURNIPS, ANNUAL.—The produce of Britain. It is cultivated in all parts of the Deccan at the commencement of the rains and the cold weather. They continue until the latter end of February, and go to seed easily. The soil should be rich and light, and they may be sown broad cast, and then transplanted, either in rows or ridges, and a space of at least six fingers' breadth allowed between each. In the rains a small caterpillar is bred on the leaves, which, if not removed, will destroy the whole. The sorts are white, and red; one species grows above the ground.

VEGETABLE MARROW, OR SQUAST. *Hind.* SUPPARA ROOMRO.—This is a very delicate vegetable of the Gourd species. The crooked necked, when about

* SALSIFY.—This is the black scorzenora, and requires the same treatment.

six inches long, is well flavoured, but soon gets hard and stringy. The pear-shaped is the best of any, but must be dressed when young.

Propagation only by seed, and the plants should never be removed, but remain where sown, only thinning the weakly ones.

The soil should be a rich loam, the same as for cucumbers. Train the plants on sticks. It is often necessary to fertilize the female blossoms, by approaching the anthers of the male flower when charged with pollen.

Water Cress.—A native of Great Britain. Is generally raised from slips. It thrives best in a running stream, and is to be had all the year round. It is grown from seed in beds near a water-course, and the supply may be kept up for any length of time. A small black caterpillar is very destructive to it: the only remedy is flooding the plants for a short time.

GARDENER'S CALENDAR FOR MADRAS AND BANGALORE.

JANUARY.

MADRAS.

Mean temperature, 75·6.—Average fall of rain, 1·29 inches.

The season is too far advanced to sow the generality of vegetables with much prospect of success; but turnips, carrots, love-apples, vegetable marrow, lettuce, endive, radish, mustard and cress, spinage, and Nepaul spinage, may be sown during all this month; also successive crops of cabbage and knol-khole every fortnight. Turnips are said to succeed best when placed in rows: they should be thinned to a distance of six inches from each other. Carrots rarely succeed well when planted at this season: they should be thinned, but not transplanted, except when required for seed. Love-apples, when two or three inches high, should be planted out in beds at five inches apart: afterwards transplant in rows two feet from each other, with a framework to run upon. Vegetable marrow should be sown in rich light soil: earth up the stems as they increase, and peg down the leading branches at a joint. Lettuce and endive should be planted in boxes, and transplanted at one foot apart from each other; they may also be sown in beds, and thinned to the proper distance: a few days before use they should be blanched. Radish, mustard, and cress, may be sown every week or ten days; the two last throughout the year. Spinage, to be sown in beds, and thinned until the plants are one foot apart. Nepaul spinage should be planted in rows, with trellis work to run over. This vegetable continues to flower and bring forth fresh leaves throughout the year, and requires no care. Cabbage and knol-khole should be planted in boxes, and transplanted into beds about three or four inches apart in three weeks or a month. They may be transplanted a second or third time, especially the latter. When transplanted for the last time, they should be put in well manured trenches, at two feet from each other. Horse manure and ground bones are strongly recommended for all the cabbage tribe. With care, cabbage and knol-khole may be procured during every month in the year.

Cape or English seed potatoes may be planted during the first week of this month; and, if the season prove cool, they may be expected to arrive at considerable perfection. The early part of December is a more favourable time for planting potatoes; but it is hardly possible to procure fresh seed-potatoes from England before the beginning of January.

In this month the following vegetables and fruits are sometimes procurable in the market, in small quantities and at high prices,—carrots, turnips, cabbage, knol-khole, beet-root, salad, negro-salad, Bombay and country onions, Surat onions,

beans, country beans, double beans, Vellore beans, French beans, white beans, Goa beans and peas, (the last always dear, and seldom good,) pumplenose, Manilla and camala orange, chota orange, country orange, pomegranate, guavas, apples, limes, jack fruit, figs, red plantain, yellow plantain, thurmerten fruit, bilimbi, and occasionally mangoes.

BANGALORE.

Mean of the thermometer, 70.—*Quantity of rain measured, none.*

In this month most of the culinary vegetables are in great perfection. Grapes, apples, pine-apples, and also a few strawberries and peaches, are in season. Such apple trees as have finished bearing, may now be pruned, although it would be better to delay it until the ensuing month. Sow seeds of such vegetables as peas, radish, spinage, &c., that do not require more than three months to come to perfection. This is a good month for altering or making a garden, laying walks, &c. Open the roots of vine trees.

FEBRUARY.

MADRAS.

Mean temperature, 77·7.—*Average fall of rain*, 0·04 *inches.*

The remarks on last month apply generally to this; but there is less chance of success in rearing vegetables, as they seldom acquire much strength before the hot winds set in. Turnips and carrots rarely succeed; but radish, mustard and cress, lettuce, endive, spinage, and the cabbage tribe, should all be planted in this month, and throughout the year.

All the fruits, vegetables, and flowers, mentioned as procurable in the market in January, may be had in greater perfection, and cheaper, during this month.

In the beginning of the month peas are plentiful; and with care the following may be obtained of good quality:—Jerusalem artichokes, asparagus, duffin beans, French beans, scarlet runners, beet-root, brocc oli, cabbage, carrots, cauliflowers, celery (in great perfection,) endive, lettuce, knol-khole, onions, parsnips, spinage, turnips, and yams; also the following fruits,—custard apples, Brazil gooseberries, guavas, lemons, mangoes, mulberries, pumplenose, raspberries, sapadello, tomatas, and occasionally apples.

BANGALORE.

Mean temperature, 74½.—*No rain.*

In this month pine-apples, peaches, grapes, and strawberries, may be had in great abundance and perfection. A few apples remain. Dahlia seeds should be sown towards the end of the month, in situations protected from the burning winds of the two ensuing months: the old roots should also be planted in large pots of sand, covered with some fermenting vegetable matter, to induce them to send out shoots. Very few vegetables can be sown with advantage this month. Graft peaches and apples, and prune apple trees.

MARCH.

MADRAS.

Mean temperature, 80·8.—*Average fall of rain*, 0·70 *inches.*

But few vegetables come to any perfection that are sown in this month, but it is desirable to sow successive crops of cabbage and knol-khole, which may be

planted in beds that are partly protected from the sun, and transplanted into rows as required. With care, salad may be grown in this month, and generally throughout the year.

In the market, brinjals, carrots, and turnips, may be procured in considerable quantities, and pretty good. Turnips are generally very stringy towards the end of March. Country radish, and all kinds of country greens, may be had in large quantities ; but no fruits can be obtained in the market, except the red and white plantain, which are always in season.

BANGALORE.

Mean temperature, 80.—*Quantity of rain measured,* 2¼ *inches.*

During this month the roots of apple trees should be opened by those who approve of that system, and very strong manure should be applied. Strawberries, grapes, and peaches, are in season. The ground should be dug about the roots of vines. The dahlias sown last month will require transplanting, and the shoots should be separated from the old roots. Plant tuberose roots. Beet-root and celery are in perfection. As the winds and hot air of this month are very injurious to vegetation, as few seeds as possible should be sown.

APRIL.

MADRAS.

Mean temperature, 8 37.—*Average fall of rain,* 0·40 *inches.*

The remarks on March apply equally to this month; but as the hot season advances, the chances of success in rearing most kinds of vegetables diminish. Melons and cucumbers should be sown during this month. Sow melons in rich light soil, giving the plants plenty of room to run. When they have made four leaves stop them by pinching off the leading bud; they will then produce two lateral shoots, which stop in a similar manner: and so continue to treat each new formed shoot, stopping it at the second or third joint. When the plants begin to show fruit, stop the fruiting branches two joints before the fruit. Cover the ground with leaves or straw, to keep the roots cool, and to prevent the fruit from becoming spotted.

In this month yellow and red plantains, pine-apples, grapes, pumplenoses, chota and camala oranges, are procurable in the market. Carrots, turnips, beans, and cabbages, are reduced in quantity, and their prices are considerable. Brinjals, radishes, water pumpkins, pavekah, peerkengah, and greens, are to be had in abundance.

BANGALORE.

Mean temperature, 80½.—*Quantity of rain measured,* 3½ *inches.*

Sow all flower-seeds to come to perfection in July and August. They will be refreshed by the early rains, called mango showers, and there is generally rain in Mysore during June. Sow every kind of vegetable seed. As the mango will be in flower, if requisite, spread some manure round the roots of the trees, slightly stirring the soil. Shift the dahlias. Sow wheat. Plant potatoes. The flower buds should be dry this month, as the scorching sun will very effectually destroy the weeds.

MAY.

MADRAS.

Mean temperature, 86·8.—*Average fall of rain*, 0·77 *inches.*

Melons, cucumbers, love-apples, and Nepaul spinage, may be sown during this month; also successive crops of the cabbage tribe, and mustard and cress. Mangoes, oranges, pine-apples, pumplenoses, red and yellow plantains, and grapes, are supplied abundantly. Brinjals, greens, peerkengah, drumstick or moorungakaw; and in flowers, all sorts of mallgay flowers are be had plentifully in the market.

BANGALORE.

Mean temperature, 81.—*Quantity of rain measured*, 3 *inches.*

Repeat the sowing of last month, or it may be deferred till next month. Transplant the seeds of vegetables sown last month, and prepare the beds for the final transplanting of knol-khole, cabbage, and cauliflower, watering the soil richly. The dahlias should now be turned out of the pots into the open ground, in a sandy well manured soil. Sow some cotton seed.

JUNE.

MADRAS.

Mean temperature, 88.—*Average fall of rain*, 1·46 *inches.*

If the season is at all favourable, this is a very desirable time to sow the first crop of celery, beet-root, and asparagus, in boxes, for transplanting towards the latter end of August or beginning of September.

Cabbage seed may be sown in boxes in all this month. If the weather be favorable for transplanting, they should be put out in beds in the following month, and finally transplanted in August. In ordinary seasons good cabbage may be procured in this manner during the whole of October, November, and December, by which time peas and other vegetables become abundant. If the weather should continue very hot during September, without showers, the plant should be kept in the boxes until the end of September or beginning of October.

As it is desirable to get strong celery plants before the monsoon, fresh seed should be sown every fortnight from the middle of June until the end of October. Beet also should be sown in successive crops, and transplanted once or twice. This vegetable is not likely to be injured by the heavy rains of the monsoon. Asparagus seed should be sown in boxes towards the latter end of the month, and transplanted in November, in rows two feet apart, and the plants one foot from each other. The soil should be mixed with a large portion of rotten horse manure: it is scarcely possible to make the ground too rich for asparagus. Fresh asparagus seed should be sown whenever procurable, and especially between the end of June and the beginning of December.

In this month mangoes, oranges, pine-apples, pumplenoses, plantains, pomegranates, cucumbers, melons, green melons, and limes, are abundantly supplied, at low prices, in the market. Carrots, turnips, cabbage, and other European vegetables, are scarce and dear; but pavekah, podalongah, greens, and brinjals, are procurable in small quantities.

The following fruits and vegetables are also to be had in this month :—custard apples, sapadella, lemons, mangosteen, parsnips, salad, and vegetable marrow.

BANGALORE.

Mean temperature, 76.—Quantity of rain measured, 4 inches.

The directions for this month are very similar in many respects to those given for May and April, in order to have the flowers and vegetables later in the season. Mangoes are in great perfection. Stake the dahlias put into the ground last month. The Natives plough their ground and sow the eastnut. The white grub of the cricket is often very numerous this month, and commits dreadful havoc. This is the best month for sowing seeds from England, &c., provided they arrive in the two or three preceding months, but in general it is advisable to sow them as soon as they are unpacked. The fields for hay should be scratched by the native plough and manured. Cuttings and suckers of chrysanthemums, if taken off and planted in small pots, will flower in September.

JULY.

MADRAS.

Mean temperature, 85·7.—Average fall of rain, 3·73 inches.

In this month it is desirable to sow celery, beet, knol-khole, cabbage, cauliflower, broccoli, asparagus, endive, lettuce, carrots, and turnips.

CELERY.—Sow in boxes in this and the two following months. Remove to beds when about three inches high, and into trenches, as required, after being a month in the beds. The trenches should be 2½ feet deep, filled up with a foot of light soil and stable manure, and afterwards gradually, as the plant grows, with light soil, till within about six inches of the top. Water for the first two months with the hand, after which they may be occasionally flooded.

Another way.—Having sown and transplanted as above, remove into trenches four feet apart, and about 18 inches deep, nearly filled with horse manure and rich earth. As the plant grows, bank up into ridges, with light soil. By this method the root of the plant, and not the stem, is watered when flooded.

KNOL-KHOLE, CABBAGE, CAULIFLOWER, AND BROCCOLI.—Sow in boxes during this and five following months. Remove in beds when two inches high, and transplant the cabbage and knol-khole twice, and cauliflower and broccoli at least three times, allowing the growth of a couple of new leaves between each planting.

ASPARAGUS.—Sow in beds in July, and remove the plants in November into raised beds of one or two rows. When the berries become red, cut the plants two inches above the ground and dress the tops, when they will be ready to cut in ten days. By dressing the beds in succession, asparagus may be produced for the table all the year. Stable manure is the best, and the plant should invariably be watered by the hand, and never flooded except in the hot wind season. Plants if taken care of will produce for eight or ten years; they should however be wintered (roots cleared of the earth and exposed for some days,) and the ground dressed, every second year.

LETTUCE AND ENDIVE.—Sow in boxes and pots surrounded with water till the plants appear, otherwise the small red ant will destroy them: plant out as required, and tie up a few days before you cut for use. Black Town, or St. Thomé, manure is the best.

CARROTS.—Sow in a light deep sandy soil.

TURNIPS.—Sow in a rich soil well manured.

PEAS.—Should the fall of rain be considerable throughout June, and in the early part of this month, a few peas may be sown once a fortnight until the monsoon, but the plants die so soon after they begin to pod, even in the most favorable seasons, that the produce is generally less in quantity than the seed sown.

In the market, all European vegetables are scarce and dear this month. Brinjals, greens, vandakaw, and other native vegetables, are supplied in small quantities. Mangoes and pine-apples are getting out of season. Plantains, cucumbers, and melons, are plentiful.

BANGALORE.

Mean temperature, 75.—*Quantity of rain measured*, 4 *inches.*

Mangoes still continue till towards the end of the month; young plants should then be grafted, and the trees pruned as soon as they have done bearing, as that is the only time when it can be done with impunity. Cuttings of all trees and shrubs should be put in this month, as well as slips of artichokes, which, as soon as they have established themselves, should be cut down close to the ground. The Natives generally sow the raggy and cholum, prepare the ground for rice, and plant cuttings of sugar cane. Flower and vegetable seeds may still be sown, and in regular seasons the cabbage tribe of the first and second sowings should be finally transplanted. The first crop of hay is cut this month.

AUGUST.

MADRAS.

Mean temperature, 84·6.—*Average fall of rain*, 4·76 *inches.*

Successive crops of all the vegetables sown in July should be planted this month, more especially celery and beet, which should be fit to transplant a second time before the monsoon. These two vegetables are less likely to suffer by excessive rain than most others. Artichokes should be sown in beds during this month, three inches between each seed, so as to allow the removal of the plants in November without disturbing the roots. To propagate by suckers, take off the suckers, and prick them out six inches apart; and when they become well rooted, transplant into deep rich soil, setting them two feet apart. If large, suckers may be planted at once where they are intended to remain.

To prevent artichokes running to leaf, and producing small heads, when the plants are from ten to fifteen inches high cut them off close to the ground, and cover them over with light dry old manure; when they have advanced a few inches repeat the operation. If the young plants are tied up for a few days before being cut off, they will become blanched, and may be eaten as salad.

French beans and scarlet runners may be sown during this month, and until February. They should be planted in rows two feet apart, north and south, and be well supported with sticks, or with an arched bamboo trellis, which is very ornamental.

European vegetables continue scarce and dear. Brinjals, greens, and other native vegetables, are to be had. Mangoes, pine-apples, and oranges, are very scarce. Plantains continue in abundance.

BANGALORE.

Mean temperature, 74.—*Quantity of rain measured*, 5⅝ *inches.*

Oranges, loquats, and alligator pears, in season. Insects are excessively numerous and destructive. The orange tribe should be budded and inarched, and propagated by gooties. Plant beds with early strawberries. Still sow a few vegetable and flower seeds. Continue grafting mangoes. Transplant cotton. Propagate carnations and pinks by layers. Begin collecting seeds of early flowering annuals. Dahlias are in perfection.

SEPTEMBER.

MADRAS.

Mean temperature, 83·7—*Average fall of rain*, 5·30 *inches.*

Continue to sow all the vegetables mentioned for August. Transplant cabbage, cauliflower, broccoli, beet, celery, endive, and lettuce. Two or three crops of peas may be sown during this month, if the weather is favourable, but not with much prospect of success. The seed peas that answer best in Madras are those grown at Bangalore.

Peas should be planted in well raised beds, in double rows, about two feet apart. They should be watered by hand for the first fortnight, and afterwards flooded. Peas require no manure, but should be planted in good soil.

BANGALORE.

Mean temperature, 75.—*Quantity of rain measured*, 8½ *inches.*

Alligator pears and loquats still continue. Apples come in. Sow orange seed and alligator pear stones. Young potatoes in season. The American cotton sown early, in full fruit. Plant Cape bulbs, either in the ground or in very deep pots well drained. The turnips and cabbages are much infested by a small dark caterpillar, which may be destroyed by sprinkling the plants with powdered lime. The rice begins to flower. Put down cuttings of geraniums, roses, violets, heart's-ease, &c. Flowers are in great perfection. As most of the peach trees will have lost their leaves, the roots should be opened and exposed for fourteen days, and then strongly manured. The principal crop of hay is cut this month.

OCTOBER.

MADRAS.

Mean temperature, 82·0.—*Average fall of rain*, 11·12 *inches.*

The remarks on last month apply equally to this. Continue to sow all kinds of vegetables seeds in boxes ; transplant from the boxes into beds, and immediately after the first heavy fall of rain remove into rows and trenches,—more particularly celery, beet, cabbage, knol-knole, cauliflower, and broccoli. Care should be taken in finally transplanting all the cabbage tribe, to provide against heavy falls of rain, by making trenches to carry off the water. Crops of peas should be sown every week or ten days from the beginning of this month until the 10th of December; peas sown after that time seldom pod.

Onions and leeks should be sown during this month in light rich earth, carefully covering the seed. When leeks are a few inches high, plant them in drills, eighteen inches apart, and nine inches plant from plant. As they increase in size,

draw up the earth to their stems, in order to blanch them : leeks are much improved by blanching.

Sow parsnips in rich deep soil. Trench the ground two feet deep ; sow the seeds in drills one foot apart, and thin the plants so as to leave eight inches from each other.

But few fruits, vegetables, or flowers, are procurable in the market this month ; but cabbages, carrots, and spinage, may be produced from your own garden with ordinary attention.

BANGALORE.

Mean temperature, 74.—Quantity of rain measured, 4 inches.

Apples and vegetables are in great perfection. The main beds for strawberries should be planted. Vines will begin to flower early in the month ; the borders should be dug, and well manured. Dahlias will begin to fail in this month. As soon as the leaves begin to wither, they should be taken up with the soil that adheres to them, and kept in a dry place. As soon as they have been sufficiently dried, they should be packed in boxes of sand till the time for planting arrives. The double tuberoses should be similarly treated.

NOVEMBER.

MADRAS.

Mean temperature, 78·9.—Average fall of rain, 14·13 inches.

This is the month for activity in the vegetable gardens, as but few things arrive at much perfection which are not planted before the end of this month. The principal crops of peas should be sown during the first week, and continued every three days during the month ; also French beans, scarlet runners, broad beans, and Windsor beans : the two last have rarely succeeded in Madras. Sow beet, knol-khole, cabbage, broccoli, and cauliflower, in boxes : transplant from boxes into beds, and remove from beds into rows. Transplant celery and remove into trenches. Plant out artichokes and asparagus. Broccoli and cauliflower seed planted on the 25th of this month, and transplanted on the 20th December, in a sandy soil, with a small quantity of horse dung soil with common manure, produced fine heads on the 18th of February. They were watered by hand for the first fortnight, and afterwards flooded in the usual way.

Potatoes should be sown towards the end of this month. They should be planted in light red soil in which no horse dung is mixed. The potatoes should be cut according to the number of eyes, taking care that each piece is of sufficient size. When planted, not more than one inch or one and a half inches of soil should be placed over it ; and it should not be watered oftener than once in four days, even during the hottest weather. As it grows up, the soil should be banked up to the stalk. Great care should be taken not to give too much water, and not to put too much soil upon the potatoe when first planted.

It has lately been recommended to plant potatoes whole instead of cutting them as formerly : it is also said that the produce is much increased by taking off he flowers as they form ; but potatoes flower so seldom in Madras, that it is hardly ossible to offer a practical opinion on the subject.

BANGALORE.

Mean temperature, 72.—*Quantity of rain measured*, 2¾ *inches.*

Apples are still in season. This is the last month in which the generality of vegetables can be sown with advantage. Sow the casuarina and other tree seeds. This is a good month to lay in a stock of manure, and prepare composts for the next year. The larger kinds of perennial water-flowers should be taken up, and reduced in size and re-planted.

DECEMBER.

MADRAS.

Mean temperature, 76·4.—*Average fall of rain*, 4·61 *inches.*

In the beginning of the month sow French beans, scarlet runners, broad and Windsor-beans. Peas sown in this month rarely pod, although they grow luxuriantly. Plant out celery from boxes to beds, and remove from beds to trenches. Sow cabbages and knol-kholes, and transplant as above. Vegetable marrow may be sown in the early part of this month in light rich soil. Earth up the stems of the plants as they increase in growth, and peg the leading branches down at a joint, and they will strike root.

Potatoes may be planted until the end of this month ; but those sown during the first fortnight are most likely to succeed. Seed potatoes procured from England or the Cape, are greatly to be preferred to those grown in this country. When potatoes are planted whole, the produce is finer than when they are divided into two or three pieces ; but the same number of potatoes yield a larger crop by the latter than by the former method. Cape potatoes planted on the 18th of December made their appearance on the 30th of that month, and were ripe on the 16th of March. Potatoes should be planted in beds fully exposed to the sun. In rather shady places the crop is small, and when altogether excluded from the direct rays of the sun, they produce nothing.

European vegetables are scarce during the early part of the month ; but all sorts of pavelkah, pumpkin, water pumpkin, brinjals, podalangaw, sweet potatoe, or velly kelingoo, saury kelingoo, yams, aivully kelingoo, and leno vulty kelingoo, are plentifully supplied in the markets. Fruits are scarce, except plantains, guavas, and oranges. The samindee flower and rose are to be had in great abundance.

BANGALORE.

Mean temperature, 69.—¾ *inch of rain measured.*

Apples are still in. Young trees should be grafted, and cuttings put down to graft seedlings on. All vegetables in season. A good month for sowing melon and cucumber seed, as well as peas, radish, and spinage, but very few other vegetable seeds. Most of the exotic plants will have ceased flowering, the beds should therefore be dug up and manured with a soil composed of two-thirds vegetable and one-third well decayed animal manure. Turn out and examine the dahlia roots. Prune the roses.

GENERAL REMARKS.

MADRAS.

Winter and dress figs, mulberries, and custard apples. Dress pines in September, and remove the suckers, and dress again with stable manure, red earth, and sand, in January. Sprouts of cabbage, cauliflower, broccoli, and knol-khole, taken in February, March, and April, and even in May, afford a good vegetable during the hot season.

Plantains, pine-apples, and figs, may be watered in the mornings; but everything else in the evening only. The seed peas that answer best for Madras are those from Bangalore—the common white pea of Mysore. The best carrot, turnip, and onion seed is from Hyderabad; knol-khole from the Cape; and cabbage, cauliflower, beet, and celery, from England: other seeds from Bangalore and the Neilgherries.

Good manure for all sorts of flowers, is red earth and sheep's dung, in nearly equal quantities.

BANGALORE.

The meteorological observations of three years—1834-5-6—were one very hot, and one very rainy season: this may therefore be regarded as a very fair average when taken together.

INDEX

OF NATIVE VEGETABLES, GREENS, &c.

WHEN PROCURABLE.

Ambarie, procurable all the year round.
Beindee, September to March.
Brinjals, ditto ditto.
Ballar, sown in June, ripe in October.
Chooka, from June to March.
Bhoe, September to January.
Chowlie, sown in June, and ripe from September to January.
Choukundar, from May to January.
Chundorie, to be had all the year round.
Chankoorah, or Pothee, from March to July.
Chundan Butwar, to be had all the year round.
Chul, ditto ditto.
Chackoondra, April to July.
Dill-pussund, ditto ditto.
Gajur, from October to June.
Gownwhar ka phull, do. ditto.
Good Alloe, January to June.
Gurrieg phull, October ditto.
Huldie, sown in June, remains twelve months.
Mooringa, the pods are procurable almost all the year.
Hudgar, from September to February.
Kurralah, August to March.
Kumruck ka pullie, September do.
Kura, September to November.
Kuckrie, March to July.
Kutchna, during the cold season.
Kuldie, or Kuddar, September to March.
Karmonie, September to January.
Kotemeer, sown in September, and ripe in three months.
Lussun, September to January.
Maut ka bajee, all the year round.
Mathee and Mathar, ditto ditto.
Mirchie, from July to April, but procurable all the year.
Peeaz, all the year round.
Pend Allo, sown at almost all seasons of the year, chiefly in the rains.
Poot, from July to January.

Pookelah, from July to April.
Poce or Butchlar, during the rains and cold season.
Ruthree ka bajee, ditto ditto.
Raje Gurah, ditto ditto.
Rut Alloe, ripe from December to April.
Shulgum, August and September, and from January to March.
Seo Pollok, September to July.
Souf do., procurable during the rains and cold season.
Same ke pullie, September to March.
Saymee, or Sayndnah, from September to January.
Sursoh, all the year.
Sooriakhund, in the cold season, two sorts, bitter and sweet.
Soorie, common in pawn gardens.—See medicinal qualities.
Soorun, after the rains.
Turrie, at all seasons.
Thur Kukrie, April to July.
Thurbooj, April to September.
Thuzzotals, during the rains and cold season.
Urvie, September to January.
Udruck, sown from March to July, and ripe in nine months.
Wachvee, during the rains and cold season.

A LIST

OF DIFFERENT SORTS OF GRAIN SOLD AT AURUNGABAD,

WITH PRICES WHEN IN ABUNDANCE.

Wheat or Gheun,—four kinds, Burra Bunsie, Chota do., 3rd sort, Kuthur, 4th, Poteor, sells from 20 to 46 seers.

Jewarie,—Two kinds, red and white, the red is sown in June, the white in October, sells from 30 to 60 seers.

Channar, or Gram—One sort, from 25 to 40 seers.

Bajarie,—One sort, Sown in June, 45 seers.

Rallah,—Do. Sown in July, ripe in October, 20 to 30 seers.

Tour ka Dall,—Sown in June in fields, ripe in November, 25 to 30 seers.

Mussoor ka Dall,—Sown in November, ripe in February (red sort), 15 to 20 seers.

Oddud ka Dall,—Do. do. 15 to 20 seers.

Moong ka Dall,—Sown in June, ripe in September or October, 20 seers.

Tillie Seed, Black and White,—Sown in November, ripe in January, 20 to 25 seers.

Kuldie,—Sown in November, ripe in February, 40 seers.

Cottie,—Sown in June, ripe in September or Octobor, 30 to 40 seers.

Lac ka Dall,—Sown in June, ripe in September: it is either ground into flour or split like peas, 30 to 40 seers.

Mucka ke Jowarie.—Indian corn, Sown in June, ripe in three months, 4 to 8 seers.

Choul,—Only one kind grown about Aurungabad in the rains, a middling sort of white, 9 to 12 seers.

Rye,—Mustard, sown from June to February, 4 to 6 seers.

INDEX OF
ANNUAL, BIENNIAL, AND PERENNIAL, FLOWER-PLANTS.

THE following are best known by the English names, but as the Scientific names are requisite to show the genus to which they belong, they are also given. Such popular names as Convolvulus Minor, Flos Adonis, &c., have no affinity with the Latin, and are not to be considered as translations.

1st Column.—Hardiness and Duration of each plant.

2nd Ditto.—Colour of Flower.

3rd Ditto.—Height.

4th Ditto.—Price.—Packets may also be had of those marked 3*d*, of JAMES CARTER, Seedsman and Florist, 238 High Holborn, London; also of MINIER, ADAMS AND NASH, 63 Strand: and should instruments such as saws, pruning-knives, &c., &c., be required, I would recommend Mr WEISS of the Strand also.

A—IS EMPLOYED TO INDICATE VARIETIES.		H. & Dur.	Col. of Fl.	Hght.	Price.	
				feet.	*s.*	*d.*
Aster, Chinese, m... ...	Aster Sinensis, pl. var...	hha.	div.	2		3
Quilled (German).....	,, Fistulòsus, 20 v...	—	—	—		6
,, Dark blue... ..	,, Atro-cærùleus. ...	—	d. b.	—		3
,, Light blue... ...	,, Læte-cærùleus. ...	—	l. b.	—		3
,, Dark red... ...	,, Atrorùbens... ...	—	d. r.	—		3
,, Rose...	,,Ròseus...	—	rose.	—		3
,, Turkey...	,, Turcicus.	—	cr.	—		3
,, White...	,, Albus...	—	wh.	—		3
,, New Globe. ..	,, Globòsus Nòvus....	—	div.	—		6
,, New Pyramidal	,, Pyramidàlis... ...	—	—	—		6
,, Variegated... ...	,, Variegàtus... ...	—	—	—		6
,, New Dwarf.....	,, Nànus Nòvus.....	—	—	1		6
Auricula, Alpine... ..	Prímula Aurícula... ...	hp.	—	½		6
Finest Prize... ..	,, ,, ,,	—	—	—	2	6
Balsam, Finest m.....	Balsámina Hortensis...	ta.	—	2		6
Double Purple... ...	,, Purpùrea Plèna.	—	pur.	—		3
,, Dark Rose... ..	,, Atro-ròsea, ... ,,	—	rose.	—		3
,, Scarlet...	,, Coccínea,... ... ,,	—	sc.	—		3
,, White...	,, Candida, ... ,,	—	wh.	—		3
,, Striped...	,, Striàta... ... ,,	—	div.	—		6
,, Camellia...	,, Camelliæflòra... ...	—	—	—		6
,, Dwarf Scarlet...	,, Coccínea Nòva...	—	sc.	1		3
,, Mixed Dwarf...	,, Nàna Nòva... ...	—	div.	—		6
Broom, Ornamental.....	Cytisus et Spartium.	hp.	y. & w.	5		6
Candytuft White.....	Ibèris Amàra, (bitter)...	ha.	wh.	1		3
Purple...	Unbellàta...	—	pur.	—		3
New Crimson.....	,, Phœnícea.	—	cr.	—		3
New Blush...	,, Carnea Nòva... ...	—	blsh.	—		3
New Rocket... ...	Coronària...	—	wh.	—		3
Fragrant...	Odoràta	—	—	—		3
Mixed...	,, ,, ,,	—	div.	—		3

A—IS EMPLOYED TO INDICATE VARIETIES.		H. & Dur.	Col. of Fl.	Hght.	Price.
				feet.	*s. d.*
Canterbury Bells... ...	Campánula Mèdium.....	hp.	bl.	2	3
White...	,, Alba...	—	wh.	—	3
Double...	,, Flòre-plèno... ...	—	w. & b.	—	6
Capsicum, 10 var... ...	Capsicum Annuum, &c...	ta.	y. & r.	—	6
Catchfly, Lobel's... ...	Silène Armèria... ...	ha.	red.	1	3
White...	,, Alba...	—	wh.	—	3
Chrysanthemum, m.....	Chrysan., 2 var..... ...	—	y. & w.	3	3
Tricolor...	Carinàtum...	—	3 col.	1	3
New Golden... ...	,, Flàvum...	—	yel.	—	3
Showy...	Speciòsum...	—	—	—	3
Clary, Red-topt... ...	Salvia Hormìnum... ...	—	red.	1½	3
Purple-topt.	,, Purpùrea..... ...	—	pur.	—	3
Cockscomb, Dwarf. ...	Celòsia Christàta, Nàna.	ta	—	1	6
Columbine, Double. ...	Aquilègia Vulgàris... ...	hp.	div.	2	3
Convolvulus minor. ...	Convolvulus Trìcolor...	ha.	b. v.	tr.	3
New Dark..... ...	,, Atropurpùreus. ...	—	pur.	—	3
Large Flowered...	,, Grandiflòrus.	—	—	—	6
New Variegated...	,, Variegàtus Novus.	—	var.	—	6
White...	Bícolor...	—	w. & y.	—	3
Mixed...	,, ,, ,,	—	div.	—	3
,, ,, ,,	Nos 867 to 872... ...	—	—	—	1 6
Convolv. Major, m.....	Ipomæa Purpùrea... ...	hha.	—	cl.	3
Extra Fine, 20 v...	,, ,, ,,	—	—	—	1 0
New Crimson.....	,, Kermesìnus... ...	—	cr.	—	1 0
Rose-coloured... ...	,, Roseus...	—	rose.	—	3
Spotted...	,, Punctàtus..... ...	—	sp.	—	3
Striped...	,, Striàtus...	—	st.	—	3
Violet...	,, Violàceus..... ...	—	vi.	—	3
Very Dark... ...	,, Atroviolàceus... ...	—	d. v.	—	3
,, ,, ,,	Nos. 875 to 881	—	div.	—	3 0
Cowslip, Mixed..... ...	Prímula Vèris...	hp.	—	½	3
Cyanus, Sky-blue... ...	Centaurea Cyànus... ...	ha.	bl.	2	3
Brown...	,, Brunnea...	—	br.	—	3
Fine Mixed... ...	,, ,, ,,	—	div.	—	3
Egg Plant, Purple.....	Solànum Ovígera... ...	ta.	pur.	—	3
White Fruited.....	,, Leucocarpon... ...	—	wh.	—	3
Flos Adonis...	Adònis Æstivàlis... ...	ha.	sc.	1	3
Flame-coloured. ...	Flammea...	—	fl.	—	3
Fraxinella, Red... ...	Dictamnus Fraxinella...	hp.	red.	3	3
White...	,, Albus...	—	wh.	—	3
French Honeysuckle...	Hedýsarum Coronàrium	hha.	sc.	2	3
White...	,, Album...	—	wh.	—	3
Globe Amaranthus... ...	Gomphrèna Globòsa.....	fgh.	pur.	—	3
White...	,, Alba.....	—	wh.	—	3
Mixed...	,, ,, ,,	—	div.	—	6
Gourd, Bottle...	Lagenària Vulgàris.....	fa.	yel.	tr.	6
Hercules' Club.....	Clavàta...	—	—	—	6
Mammoth...	Cucurbita Pèpo... ...	—	—	—	3
Orange...	Aurantia...	—	—	—	3
Striped Pear... ...	Ovìfera...	—	—	—	3
Mixed...	,, ,, ,,	—	—	—	3
Hawkweed, Purple. ...	Crèpis Rùbra...	ha.	pur.	1	3
Snow White... ...	,, Nivàlis...	—	wh.	—	3
Yellow...	Tolpis Barbàta..... ...	—	yel.	—	3
Silvery...	,, Argentea..... ...	—	sil.	—	3

A—IS EMPLOYED TO INDICATE VARIETIES.		H. & Dur.	Col. of Fl.	Hght.	Price.
				feet.	s. d.
Heartsease (Pansy). ...	Viola Trícolor...	hp.	div.	—	6
Hollyhock, Antwerp. ...	Althæa Ficifòlia... ...	hp.	buff.	7	3
Double Rose...... ...	Ròsea...	—	rose.	—	3
— Black	— Nìgra...	—	bla.	—	3
— Purple...	— Purpùrea...... ...	—	pur.	—	3
— Red...	— Rùbra...	—	red.	—	3
— Yellow...	— Lùtea...	—	yel.	—	3
— White...	— Alba...	—	wh.	—	3
30 Var. Mixed... ...	— — —	—	div.	—	1 0
Chinese......	Althæa Chinensis... —	hp.	vio.	3	3
— Purple...	— Purpùrea...... ...	—	pur.	—	3
— Mixed...	— — —	—	p. & v.	—	3
————	Nos. 909 to 919... ...	—	div.	3-7	3 0
Horn Poppy, Mixed......	Glaucium, pl. var.. ...	ha.	—	2	3
Scarlet...	Phœnìceum...	—	sc.	—	3
Violet...	Rœmèria Hýbrida... ...	—	vio.	—	3
Ice Plant...	Mesemb. Crystallinum...	ta.	wh.	tr.	3
Jacobæa, dou. m.........	Senècio élegans, fl. pl...	hha.	div.	1½	6
Double Crimson......	— Kermesina... ...	—	cr.	—	3
— Mulberry.	— Rùbro-Purpùrea...	—	ml.	—	3
— Purple...	— Purpùrea...... ...	—	pur.	—	3
— Rose...	— Ròsea...	—	rose.	—	6
— Violet...	— Violàcea...	—	vio.	—	3
— White...	— Alba...	—	wh.	—	3
————	Nos. 925 to 931...... ...	—	div.	—	2 0
Larkspur, Dwarf m......	Delphínium Ajàcis... ..	ha.	—	1	3
Dwarf, German... ...	Hùmile pl. var... ...	—	—	—	6
— Blue...	— Cæleste...	—	bl.	—	3
— Rose...	— Ròseum...	—	rose.	—	3
— White...	— Album...	—	wh.	—	3
— Unique...	— Bícolor...	—	r. & w.	—	3
Larkspur, Tall m... ...	Elàtior, pl. var... ...	—	div.	1½	3
Tall German...... ...	Elàtior, var...	—	—	—	6
— Blue...	— Cærùleum...	—	bl.	—	3
— Rose...	— Ròseum...	—	rose.	—	3
— White...	— Album......... ...	—	wh.	—	3
Branching Ger... ...	Consólida, pl. var... ...	—	div.	2	6
— Blue...	— Cæleste...	—	bl.	—	3
— Rose...	— Ròseum...	—	rose	—	3
10 fine var. sep... ...	— — —	—	div.	—	2 0
Lavatera, Red...	Lavatèra Trimestris......	ha.	rose	3	3
— White...	— Alba......	—	wh.	—	3
Love-lies-bleeding... ...	Amaranthus Caudàtus...	—	red.	tr.	3
Lupins, white...	Lupìnus Albus...... ...	—	wh.	2	3
Dutch Blue... ...	Canaliculàtus... ...	—	bl.	—	3
Large Blue... ...	Hirsùtus...	—	—	—	3
Large Rose... ...	Pilòsus...	—	rose.	—	3
Yellow...	Lùteus...	—	yel.	1½	3
Straw-coloured......	— Stramíneus... ...	—	str.	—	3
Mixed...	— — —	—	div.	2	3
Mallow, 5 var. sep... ...	Malva pl. sp. et. var...	—	—	—	1 0
Marigold, French, m......	Tagètes pátula, 10 var...	hha	—	1½	6
French, Dwarf... ...	— Hùmilis...	—	—	1	3
— Superb Striped...	— Striàta Superba...	—	str.	1½	6
— Quilled...	— Fistulòsa...... ...	—	div.	—	3

A—IS EMPLOYED TO INDICATE VARIETIES.		H. & Dur.	Col. of Fl.	Hght.	Price.
				feet.	s. d.
Marigold, African, m...	Erecta, pl. var... ...	—	y. & o.	2	3
—— Lemon...	—— Cítrina..... ...	—	lem.	—	3
—— Orange...	—— Aurantìaca... ..	—	or.	—	3
—— Quilled...	—— Fistulòsa...	—	y. & o.	—	3
Cape...	Calendula Pluviàlis.....	ha.	wh.	1	3
Hybrid...	Hýbrida...	—	—	—	3
Double, Pot...	Officinàlis, fl. pl... ...	—	yel.	—	3
Marvel of Peru	Mirábilis Jalápa	hhp.	div.	3	3
Purple...	—— Purpùrea..... ...	—	pur.	—	3
Red...	—— Rùbra.....	—	red.	—	3
Striped, 3 var... ...	—— Striàta..... ...	—	stri.	—	3
Yellow...	—— Flàva...	—	yel.	—	3
White...	—— Alba...	—	wh.	—	3
Long-flowered... ...	—— Longiflòra... ...	—	—	—	3
12 Fine var. mix...	—— —— ——	—	div.	—	1 0
Mignonette, lb. 8s... ...	Resèda Odoràta, oz 6d	ha.	buff.	1½	3
Monkshood, mixt... ...	Aconìtum, pl. sp... ...	hp.	b. & w.	2	3
Nasturtions, Tall... ...	Tropæolum Màjus... ...	ha.	o. & y.	cl.	3
New Carmine. ...	—— Miniàtum..... ...	—	car.	—	3
Dark Red..... ...	—— Atrosanguíneum...	—	d. r.	—	3
Shillings...	—— Shillingii..... ...	—	spot.	—	3
Three-spotted... ...	—— Trimaculàtum.....	—	—	—	3
New Dwarf... ...	—— Mìnus...	—	s. & o.	—	3
Common Dwarf...	—— —— ——	—	or.	—	3
Palma Christi...	Rícinus Màjor...	hha.	gr.	6	3
Pea, Tangier...	Láthyrus Tingitànus...	ha.	sc.	4	3
New Striped... ...	—— Striàtus Nòvus. ...	—	str.	—	3
Pea, Sweet, m. lb. 4s...	Odoràtus, pl. var... ...	—	div.	—	3
Black.....	—— Nìger...	—	bla.	—	3
Painted Lady... ...	—— Pictus...	—	var.	—	3
Purple...	—— Purpùreus... ..	—	pur.	—	3
Scarlet...	—— Coccíneus... ...	—	sc.	—	3
Striped...	—— Striàtus...	—	str.	—	3
White...	—— Albus...	—	wh.	—	3
Persicaria, Red..... ...	Polýgonum Orientàle...	—	red.	6	3
White...	—— Album...	—	wh.	—	3
Mixed...	—— —— ——	—	r. & w	—	3
Polyanthus, ex. fine.....	Primùla Elàtior, var...	hp.	div.	½	6
Poppy, Double, m... ...	Papàver Somníferum...	ha.	—	2	3
Double Black... ...	—— Nìgrum...	—	bla.	—	3
—— Carnation.	—— Caryophylloìdes. ..	—	var.	—	3
—— Fringed..... ...	—— Fimbriàtum... ...	—	div.	—	3
—— Himelayan... ...	—— Himelayanum... ...	—	—	—	3
—— Scarlet...	—— Coccíneum... ...	—	sc.	—	3
—— Striped Rose.....	—— Ròseum Striàtum	—	rose.	—	3
—— Striped Red... ..	—— Rùbrum striàtum.	—	red.	—	3
—— White...	—— Album...	—	wh.	—	3
French Double... ...	Rhæas, fl. plèno... ...	—	div.	1	3
—— Bordered.	—— Limbàtum...	—	red.	—	3
—— Striped...	—— Striàtum...	—	str.	—	3
No. 1001 to 1012.....	—— —— ——	—	div.	—	3 0
Primrose, mixed... ...	Prímula Vulgàris... ...	hp.	—	¼	3
Princes Feather...	Amaranthus Hypocon...	ha.	pur.	2½	3
Quaking Grass...	Brìza Maxima...	—	gr.	1½	3
Quaking Grass, Slender.	Brìza Grácilis...	ha.	gr.	1	3

A—IS EMPLOYED TO INDICATE VARIETIES.		H. & Dur.	Col. of Fl.	Hght.	Price.
				feet.	s. d.
Rocket, Purple..... ...	Hesperis Matronàlis.....	hp.	pur.	—	3
Sweet...	Tristis...	—	wh.	—	3
Scabious, Dwarf.	Scabiòsa Nàna...	ha.	div.	—	3
Very Dark..... ...	Atropurpùrea.	hp.	pur.	2	3
Splendid Ger... .	,, Superba...	—	div.	—	6
Scotch Thistle...	Carduus, sp...	—	pur.	8	6
Sensitive Plant..... ...	Mimòsa Sensitìva	fgh.	pink.	2	6
Spanish Broom...	Spartium Junceum... ...	hp.	yel.	3	3
Snapdragon, m..... ...	Antirrhìnum Màjus. ...	hp.	div.	2	3
Splendid m. 40 var.	,, ,, ,,	—	str.	—	6
Carnation...	,, Caryophylloídes....	—	—	—	3
,, Yellow..... ...	,, ,, Lùteum... ..	—	—	—	6
Four-coloured... ...	,, Quadrìcolor... ...	—	4 col	—	6
Orange...	,, Aurantìacum. ...	—	or.	—	6
Pale-yellow.	,, Ochroleucum... ...	—	p. y.	—	3
Painted...	,, Pictum...	—	var.	—	3
Scarlet...	,, Coccíneum.	—	sc.	—	3
White...	,, Album...	—	wh.	—	3
Yellow...	,, Flàvum...	—	yel.	—	3
Nos. 1027 to 1036...	,, ,, ,,	—	div.	—	3 0
Stock, 10 week, m... ...	Mathìola Annua... ...	hha.	—	1¼	3
Scarlet...	,, Coccínea...	—	cr.	—	3
Intermediate... ...	,, Intermèdia.... ...	—	—	—	3
Large Scarlet.....	,, Màjor...	—	—	2	3
Purple...	,, Purpùrea..... ...	—	pur.	1¼	3
White...	,, Alba...	—	wh.	—	3
Stock, Germ., 20 v.....	Mathìola Annua, var...	—	div.	1	6
Large Packet...	,, ,, ,,	—	—	—	1 0
Dwarf Carmine.....	Densiflòra, min... ...	—	ver.	—	6
,, Dark Carmine...	,, Atro-Miniàta... ...	—	d. v.	—	6
,, Crimson..... ...	,, Kermesìna.	—	cr.	—	6
,, Dark Crimson...	,, Atrorùbens... ...	—	d. c.	—	6
,, Dark Blue... ...	,, Atro-cærùlea... ...	—	d. b.	—	6
,, Lilac...	,, Lilacìna...	—	li.	—	6
,, Light Blue... ...	,, Læte-Cærùlea.....	—	l. b.	—	6
,, Peach-bloss... ...	,, Persiciflòra... ...	—	p. bl.	—	6
,, Rose-coloured. ...	,, Ròsea...	—	rose.	—	6
,, Yellow...	,, Lùtea...	—	yel.	—	6
,, Violet...	,, Violàcea...	—	vio.	—	6
,, White...	,, Alba...	—	wh.	—	6
Nos. 1046 to 1057.....	,, ,, ,,	—	div.	—	5 0
Stock, Prussian, m.....	Græca (Cheirifòlia) ..	—	—	—	3
Purple...	,, Purpùrea..... ...	—	pur.	—	3
Scarlet...	,, Coccínea...	—	cr.	—	3
Rose...	,, Ròsea...	—	rose.	—	3
White	,, Alba.....	—	wh.	—	3
Autumnal...	Autumnàlis.	—	div.	1¼	6
Stock, Brompt., m... ...	Mathìo. Simplicicaulis...	hb.	—	2½	3
Purple	,, Purpùrea..... ...	—	pur.	—	3
Stock, Brompt., s... ...	Mathìo. Simplicicaulis...	hb.	cr.	2½	3
White...	,, Alba...	—	wh.	—	3
Stock, Queen, m... ...	Mathìola Incàna... ...	—	div.	1½	3
Purple...	,, Purpùrea..... ...	—	pur.	—	3
Scarlet...	,, Coccínea...	—	cr.	—	3
White...	,, Alba...	—	wh.	—	3

A—IS EMPLOYED TO INDICATE VARIETIES.		H. & Dur.	Col. of Fl.	Hght.	Price.
				feet.	*s.* *d.*
Stock, Imperial..... ...	Imperiàlis...	hp.	d. bl.	—	6
,, Light Blue.....	,, Læte-Cærùlea.....	—	l. bl.	—	6
,, Red...	,, Rùbra...	—	red	—	6
,, Rose...	,, Ròsea...	—	rose.	—	6
Nos. 1073 to 1076...	,, ,, ,,	—	div.	—	1 6
Sunflower, d. tall... ..	Helianthus Annuus.....	ha.	yel.	6	3
Dwarf...	Indicus...	—	—	3	3
Sweet Alyssum...	Alyssum Marítimum...	hp.	wh.	1	3
Sweet Sultan, p.....	Centaurea Moschàta.....	hha.	pur.	2	3
White...	,, Alba.....	—	wh.	—	3
Yellow...	,, Suavèolens... ...	—	yel.	—	3
Venus's Looking-glass....	Campánula Spéculum...	ha.	bl.	¾	3
Rose...	,, Ròsea...	—	rose.	—	3
White...	,, Alba.....	—	wh.	—	3
5 var. separate... ...	,, ,, ,,	—	div.	—	1 0
Venus's Navelwort.....	Cynoglossum Linifolium.	—	wh.	1	3
Virg. Stock...	Malcòmia Marítima.....	—	li.	½	3
White...	,, Alba...	—	wh.	—	3
Wallflower, Dark... ...	Cheiranthus Cheiri... ...	hp.	br.	2	3
Chameleon..... ...	,, Variábilis.	—	var.	—	3
Purple...	,, Purpùrea..... ...	—	pur.	—	3
Yellow...	,, Flàva	—	yel.	—	3
Double German...	Flòre-Plèno...	—	div.	—	6
,, Black Brown...	,, Nigrescens.	—	d. br.	—	6
,, Blue...	,, Cærùlea...	—	bl.	—	6
,, Large-flower. ...	,, Grandiflòra.... ...	—	br.	—	6
,, Pyramidal... ...	,, Pyramidàlis... ...	—	—	—	6
20 var. mixed... ...	,, ,, ,,	—	div.	—	6
Winter Cherry..... ...	Phýsalis Alkakengi... ..	ha.	wh.	2½	3
Xeranthemum, p... ...	Xeranthem. Annuum...	—	pur.	1½	3
White...	,, Album...	—	wh.	—	3
Yellow...	Elichrýsum Bracteàtum.	hha.	yel.	2	3
New White... ...	,, Album Nòvum...	—	wh.	—	3
Splendid...	,, Splendens.	—	var.	—	3
Zinnia, golden yel.....	Zínnia Aurea...	—	yel.	—	6
Large-flowered.....	Grandiflòra...	—	red.	—	3
Mixed...	,, ,, ,,	—	r & y.	—	3

CATALOGUE OF SEEDS.

ASSORTMENTS OF FLOWER SEEDS.

h, *hardy*; hh, *half hardy*.

		s.	d.
6	Fine var. Calliopsis, hha. ...	1	6
7	„ „ Clarkia, ha...	1	6
6	Everlasting Flowers, hha. ...	1	6
6	Fine Linària, ha.....	1	0
6	„ Nemóphila, ha...	1	6
8	„ Œnothèra & Godètia, ha.	1	6
6	„ Lobèlia, hh...	2	0
6	„ Marigold, hha...	1	6
8	„ Schizanthus, ha..	2	0
4	„ Sweet William, hp... ...	1	6
6	„ Wallflower, hp.	2	0
50	Finest hp. Annuals, 10*s.*; 25	5	0
50	„ h. do, 20*s.*; 25	10	0
50	Fine h. perennials, 10*s.*; 25	6	0

The selection of the above must be left entirely to J. C.

FRUIT SEEDS—*per Packet.*

	s.	d.
Currants, red, white, and black. ...		6
Gooseberry, finest mixed..		6
Melon, Beechwood, extra fine. ..	1	0
— Carter's green flesh...	1	0
— Early Cantalupe...		6
— Evans' scarlet flesh...	1	0
— Green flesh, fine...		6
— Hardiest early Cantalupe.. ..		6
— Netted Persian		6
— Pekin, new and extra fine. ...	1	6
— Scarlet flesh...		6
— Snow's Prolific...	1	0
— Sweet, of Ispahan...	1	0
— Terry's green flesh, extra. ...	1	0
— Windsor Prize, fine...	1	0
— Fine mixed Melon...		6
— 12 fine other var. separate... ...	5	0
Mulberry, 3 fine species...	1	0
Quince.		6
Raspberry, red and mixed.	1	0
Strawberry, red and white alpine.	1	0
— British Queen.	1	0
— Various fine sorts mixed... ...	1	0
— Finest mix., for preserving. ...		6
Water Melon, fine mixed..... ...		6

FLOWERING BULBS.

	s.	d.
Achímenes, 12 in 4 fine sorts... ...	2	6
Amaryllis Bella-Donna... each...	1	0
— Formosissima.		6
— 3 Greenhouse sp., each 3*s.* 6*d* for	10	0
— 2 Species, South America, each	3	0
Ammochàris coránica.	4	0
— Falcàta, 4*s.*; glauca...	4	0
Anemones, finest new dou. per lb.	7	0
— 100 finest new var. separate...	25	0
— 50 do. 12*s.* 6*d.*; 25 do..... ...	7	0
— Fine mixed new single per lb...	4	0
Arum, fine new sp. Bolivia, each...	5	0
Dahlia, extra fine double, per doz.	15	0
Gladìolus oppositiflòrus, new v. „	2	0
— Psittacinus (natalensis)..... „	1	6
— — Superbus (gandivensis) each	2	0
Lílium lancifòlium, rubrum... „	10	6
— — Album.... ... ... „	5	0
Pancràtium illýricum... ... „	1	6
Ranunculus, finest mixed, per 100	7	6
— 100 in 100 ext. fine var. named	20	0
— 50 do. do. 10*s.*; 25 do. do... ...	5	0
— Mixed Turban Ranunc. per 100.	5	0
Tigrídia Pavònia, 1*s* 6*d*. v. large, doz	2	6
— Conchiflòra, yellow... ... „	6	0
— — Superba, scarlet.... ... „	18	0
Tuberoses, double Italian..... „	4	0

KITCHEN GARDEN SEEDS.

WARRANTED GENUINE.

oz. ounce; lb. pound; qt. quart.	Price s.	Price a.
Artichoke, green... ... ...per oz.		9
Purple..... ... ... „		9
Asparagus, giant, oz. 2*d.* per lb.	2	6
Beans, early Mazagan, per quart.		6
Early dwarf Fan... ... „		6
—— Long-pod.... ... ... „		6
—— Lisbon do... ... ... „		6
Johnson's Wonderful ... „		6
Sword long-pod..... ... „		6
Green long-pod..... ... „		6
Large Windsor..... ... „		8
—— New thick do... ... „		8
—— Taylor's do .. ... „		8
—— Green do... ... „		8
Beet, fine large red, per ounce.		3
New German... ... ... „		6
New black..... ... ... „		6
New dark crimson... ... „		6
Green..... ... ... „		3
Silver-stalked... ... ... „		3
White..... ... ... „		3
Silesian sugar... ... per lb.	2	0
Borecole, or Kail, brown per ounce.		3
Green curled dwarf... ... „		3
Curled tall..... ... ... „		3
New Asparagus..... ... „		6
Buda... ... ... „		6
Variegated, &c. &c... ... „		6
Broccoli, ear. pur. Cape. ... „	1	6
White Cape... ... ... „	1	6
Green Cape... ... ... „	1	6
Early Cauliflower... ... „	1	0
—— Close-headed..... ... „	1	0
—— Malta... ... ... „	1	0
—— October..... ... ... „	1	6
—— Purple. ... ... „	1	0
—— Sprouting.... ... ... „	1	0
—— Walcheren... ... ... „	2	0
—— White... ... ... „	1	0
Adams' new dwarf.. ... „	1	6
American .. .. „	1	6
Brimstone... ... ... „	1	0
Chappel's cream... ... „	1	0
Dwarf Siberian..... ... „	1	0
Ellison's new April. .. „	2	6
Field's new white... ... „	1	6
Grange's early. ... ... „	1	6
Hampsh. gr. ... ... „	1	6
Hampton Court..... ... „	1	0
Howden's superb... ... „	1	6

pa. packet; bush. bushel.	Price s.	Price a.
Broccoli, Impregnated white.per oz.	1	0
Invisible... ... ... „	1	0
Knight's protecting. ... „	1	0
Lake's white... ... ... „	1	0
Large Spring purple..... „	1	0
—— —— White... ... ... „	1	0
Late close-headed p. ... „	1	0
—— Purple... ... ... „	1	0
—— White .. .. „	1	0
London, particular... ... „	2	6
Miller's late ... ... „	1	0
New Victoria... ... ... „	1	6
Portsmouth..... ... ... „	1	0
Potter's new pink... ... „	2	6
Snow's superb... ... ... „	1	0
Sulphur... ... ... „	1	0
Very late Danish... ... „	1	0
White Southampton ... „	1	0
Wilcox's large wh... ... „	1	0
8 best for succession ... „	8	0
4 do... do... ... ... „	5	0
Brussels sprouts, fine ... ... „		6
Imported Belgian... ... „	1	0
Cabbage, Atkins' Match ... „		6
Carter's Matchless... ... „	1	0
Early dwarf... ... ... „		6
—— Battersea. ... ... „		6
—— London Market... ... „	1	0
—— Nonpareil.... ... ... „		6
—— Sugar-loaf... ... ... „		6
—— Wonder. ... ... „	1	0
—— York... ... ... „		6
Enfield, new early... ... „	1	0
Large Battersea. ... ... „		6
—— Imperial. .. .. „		6
—— Pomeranian... ... ... „	1	0
—— York... ... ... „		6
—— Drumh., lb. 3*s*... ... „		3
—— Scotch, lb. 3*s*... ... „		3
Paignton... ... ... „		6
Shilling's Queen..... ... „		6
Spotboro' new... ... ... „	1	0
Vanack... ... ... „		6
6 finest for succession... „	3	6
Red Dutch ... ... „		6
Dwarf red..... ... .. „		6
Savoy, dwarf green. ... „		6
—— Dumhead... ... ... „		6
—— Globe... ... ... „		6
—— Yellow... ... ... „		6

oz. ounce; lb. pound; qt. quart.

pa. packet; bush. bushel.

	Price. s.	d.
Cabbage, Couve Tronchuda per oz	1	0
—— New curled. ... ... „	1	0
Chou de Milan, imp. ... „	1	0
Carrot, early Morn... ... ... „		3
Early scarlet frame. ... „		3
Long Surrey... ... ... „		3
—— Orange... ... ... „		3
—— New Brunswick. ... „		3
Altringham..... ... ... „		3
White Belgium..... ... „		3
Cauliflower, early Engl... ... „	1	6
Late English... ... ... „	1	6
—— Asiatic... ... ... „	1	6
—— Cyprus... ... ... „	1	6
Fitch's new late.. .. ... „	2	6
Popart's early Engl. ... „	2	6
Late Dutch..... ... ... „	1	6
Walcheren... ... ... „	1	6
Cardoon, Spanish. ... ... „		6
New large purple... ... „	1	0
Celery, solid white... ... ... „		3
Solid red... ... ... „		3
Giant red... ... ... „		4
Giant white..... ... ... „		4
Jones' new Matchl... ... „		6
New curled Paw... ... „		4
Seymour's white... ... „		4
Wheeler's pink..... ... „		6
Large-rooted... ... ... „		4
Chervil, curled... ... ... „		4
Corn Salad... ... ... „		3
Cress, common... ... per quart.	1	0
Triple curled... ... ... „	1	6
Golden... ... ... „	1	6
Perennial Amer. per ounce.		3
Water-cress... ... ...per pa		6
Cucumber, fine frame..... ... „		6
Fine long prickly... ... „		3
Fine Ridge... ... ... „		3
Short prickly... ... ... „		3
Turkey, wh. or gr... ... „		3
Carter's Champion.. ... „	1	0
Colney Hatch, ex. ... „	1	0
Cuthill's blackspine. ... „		6
Finest Prize Varieties: Manchester Prize... ... „		6
Man of Kent... .. ... „		6
Roman Emperor. ... ... „		6
Sion House ... ... „		6
Snow's white spine. ... „		6
Stewart's Ringleader. ... „	1	0
Superb white spine. ... „	1	0
Victory of England. ... „	1	0
Walker's Superb.... ... „	1	0
Weedon's frame. ... ... „		6
Young's Champion, &c... „	1	0

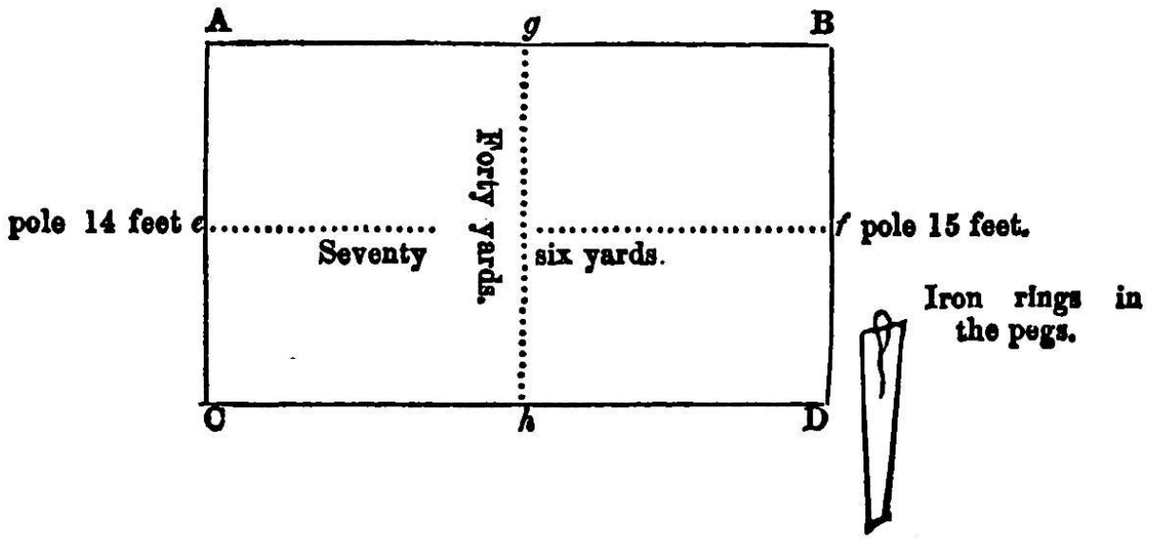
	Price. s.	d.
Cucumbers, 6 finest varieties... ...	5	0
Endive, green curled, per ounce.		6
White curled... ... ... „		6
Batavian, green. ... ... „		6
—— White... ... ... „		6
New German... ... ... „		9
French beans, China dw., per quart.	1	3
Dwarf dun. ... ... „	1	3
—— Dark dun. ... ... „	1	3
—— Fulmer's... ... ... „	1	3
—— Negro... ... ... „	1	3
—— Negro Major. ... ... „	2	0
—— Speckled. ... ... „	1	3
—— Turkey... ... ... „	2	0
Runners, scarlet..... ... „	1	3
—— French Haricot... ... „	1	6
Painted Lady... ... ... „	1	6
Turkey... ... ... „	2	0
Ice plant, garnishing..... per pa.		3
Indian Corn. ... ... „		3
Leek, London, Flag per ounce.		6
New Giant... .. ... „	1	0
Lettuce, Cos, Ady's. .. ... „	1	0
Cos, Artichoke-leav. ... „	1	0
—— Bath... ... ... „	1	0
—— —— Bl. seeded do. ... „	1	0
—— —— broad leav. do. ... „	1	0
—— Brighton. ... ... „	1	0
—— Brown... ... ... „	1	0
—— Egyptian... ... ... „	1	0
—— Florence. ... ... „	1	0
—— Green... ... ... „	1	0
—— Kensington... ... ... „	1	0
—— Nonpareil, w. ... ... „	1	6
—— Nonpareil, gr. ... ... „	1	6
—— Paris... ... ... „	1	0
—— Snow's matchl... ... „	1	6
—— White... ... ... „	1	0
—— White winter... ... „	1	0
Cabbage, wh.... ... ... „		6
—— Asiatic... ... ... „	1	0
—— Brown Dutch... ... „		6
—— Drumhead .. .. „	1	0
—— Hardy Hammers. ... „		6
—— Malta... ... ... „	1	0
—— Marseilles... ... ... „	1	0
—— Mogul... ... ... „	1	0
—— New Winter. ... .. „	1	0
—— New pink edged. ... „	1	0
—— Tennis ball... ... ... „	1	0
Silesian, brown. ... ... „	1	0
—— White. ... ... „	1	0
8 Finest sorts... ... ... „	7	0
Love Apple or Tomato... ... „	1	0
Yellow... ... ... „	1	0

oz. ounce; lb. pound; qt. quart. | pa packet; bush. bushel.

	Price			Price.
	s.	d.		s. d.
Mallow, garnishing... ... ... pa		3	Potato, Silver-skin Dutch. per pa.	1 0
Mustard, white ... ... per qt.	1	0	Purslain, gr. or gold... per oz.	6
Onion, blood-red... ... per oz		6	Radish, long frame... ... per qt.	2 0
Deptford... ... ... ,,		6	Wood's new frame... ... ,,	2 6
Glope... ... ... ,,		6	Early Scarlet... ... ... ,,	2 0
—— New white. ... ... ,,		9	Early short topt. ... ... ,,	2 0
James' keeping. ... ... ,,		9	Rong Salmon... ... ... ,,	2 0
Lisbon..... ... ... ,,		6	White Naples. ... ... ,,	2 6
New Giant. ... ... ,,		9	Red Turnip... ... ... ,,	2 6
Pickling... ... ... ,,		9	White Turnip... ... ... ,,	2 6
Portugal, white. ... ... ,,		6	Mixed Turnip... ... ... ,,	2 6
Reading... ... ... ,,		6	New Olive..... ... per oz.	2
Silver-skinned... ... ... ,,		9	Spanish, black .. .. ,,	2
Spanish, white. ... ... ,,		6	Rampion pa. 3*d.* ... ... ,,	1 0
—— Brown. ... ... ,,		6	Rhubarb, Victoria... ... ... ,,	1 0
Strasburg. ... ... ,,		6	Tobolsk, &c. &c. ... ... ,,	1 0
Tripoli large... ... ... ,,		9	Salsafy... ... ... ,,	6
Two-bladed early... ... ,,		6	Scandix bulbosa, root... ... ,,	6
Welch..... ... ... ,,		6	Scorzonera...	6
6 Finest sorts, 2 ounces each.	7	0	Sea Kail... ... ... per qt.	2 0
Parsley, extra curled... ... ,,		3	Skirret... ... ... per oz	8
Myatt's garnishing... ... ,,		4	Sorrel... ... ... ,,	6
Large-rooted ... ... ,,		4	Spinach round.. ... ... per qt.	1 0
Parsnip, best large... ... ... ,,		3	Prickly. ... ... ,,	1 0
Peas. early Kent... ... per qt.		8	Broad Flanders..... ... ,,	1 0
Early frame. ... ... ,,		8	New Zealand... ... per oz.	6
—— May... ... ... ,,		8	* *Carter's Victoria Pea warranted superior in size and flavour to any other.*	
—— Prince Albert... ... ,,	1	0		
—— Shilling's Grotto. ... ,,	1	0	Squash, fine mixed... ... per pa.	6
—— Race-horse. ... ... ,,		9	Turnip, early Dutch. per oz	3
—— Warwick... ... ... ,,		9	Early Mousetail..... ... ,,	3
—— Charlton, 2d early... ,,		8	—— Snowball... ... ... ,,	3
—— Bishop's dwarf... ... ,,	1	0	—— Nonsuch... ... ... ,,	3
—— Champion of England ,,	5	0	—— Stone or stubble... ... ,,	3
Later sorts. ... ... ,,			—— Large white..... ... ,,	3
Carter's Lilliputian... ... ,,	2	6	Yellow Altringham. ... ,,	3
—— New Colossus... ... ,,	1	6	—— Maltese..... ... ... ,,	3
—— Victoria... ... ... ,,	3	0	—— Stone... ... ... ,,	3
Glory of England... ... ,,	1	0	—— Swedish..... ... ... ,,	2
Marrow, dwarf wh. ... ,,		9	Teltau German. ... ... ,,	6
—— Dwarf green. ... ... ,,		9	Vegetable Marrow... ... per pa.	6
—— Tall white... ... ... ,,		9		
—— Tall green... ... ... ,,		9	SWEET HERBS, &c.	
Woodford's green... ... ,,	1	6		
Victoria... ... ... ,,	1	0	Balm.. .....per oz. 1*s.* per pa.	3
Knight's marow, d .. ... ,,	2	0	Basil, sweet ,, 1*s.* ,,	3
Matchless Marrow... ... ,,	1	0	—— Bush..... ,, 1*s.* ,,	3
Bedman's Imperial. ... ,,	1	0	Borage... ... ,, 6*d.* ,,	3
Groom's superb. ... ... ,,		9	Bugles... ... ,, 6*d.* ,,	3
Prussian blue... ... ... ,,		8	Burnet... ... ,, 6*d.* ,,	3
Queen of the dwarfs... ,,	2	6	Capsicum ... ,, 1*s.* ,,	3
Scimitar. ... . ,,	1	0	Chilis..... ,, 1*s.* ,,	3
10 best for succession... ,,	15	0	Clary..... ,, 6*d.* ,,	3
Potato early... ... ... per pa.	1	0	Fennel... ... ,, 6*d.* ,,	3
Late... ... ... ,,	1	0	Florence Fennel 6*d.* ,,	3

oz. ounce; qt. quart.			Price.	pa. packet; bush. bushel.	Price.
			s. d.		s. d.
Hyssop... ...	per oz.	6d. per pa.	3	Asparagus, all sorts... ...	per 100
Lavender ...	„	1s. „	3	Garlic...	per lb
Marjoram, pot	„	1s. „	3	Horse Radish...	per doz.
... Sweet. ...	„	1s. „	3	Mushroom Spawn... ...	per bush.
Marigold, pot	„	6d. „	3	Potatoe, early forcing... ...	...
Rosemary...	„	1s. „	3	Late varieties...	...
Rue...	„	1s. „	3	New ditto	...
Wormwood.	„	6d. „	3	Rhubarb Roots, all sorts,.....	each
Sage..... ...	„	6d. „	3	Shallots...	...per lb.
Savory, Sum	„	1s. „	3	Sea Kale...	...per 100
... Winter.	„	1s. „	3	Strawberry Plants..	„
Thyme... ...	„	1s. „	3	Raspberry Plants...	„
Tobacco (fumigating)		„	3		
ROOTS, PLANTS, &c.					
The Prices variable.					
Artichokes...		per bush.			

ELECTRICAL GALVANIC APPARATUS.



A B C D are four pegs buried three inches under the surface of the ground, having small iron staples fixed in the top of each peg to pass the wire through: the wires must be three inches below the surface. The length of the buried wire must be due North and South, and the breadth due East and West. At *e* the centre of the line A C, must be a pole 14 feet high, and in the centre of the line B D another pole 15 feet high, from both of which a suspended wire must be attached, and passing down the poles must be in contact with the buried wire at both ends. The suspended wire must not be drawn tight.

It is supposed any quantity of Electricity may be engendered by placing under the ground, at the point *g*, a bag of Charcoal, and plates of Zinc at the point *h*, and to connect the two by passing a wire over two poles similar to those at *e* and *f*, and crossing the longitudinal wire passing from those points.

GENERAL INDEX.

AGRI-HORTICULTURAL SOCIETY OF WESTERN INDIA.

THE Society beg to announce that they have made arrangements with Messrs Page & Son, of Southampton, for the arrival of a large assortment of Fresh Culinary Vegetable and Flower Seeds at three periods of the year, viz., in March, June, and September; and as they will be dispatched by the Overland Route, it is confidently expected that they will arrive in such fresh condition as to ensure their giving satisfaction.

Vegetable Seeds.	Per ounce. Rs.	As.	P.
Cabbage, Sugarloaf	1	„	„
Do. Drumhead	1	„	„
Do. Nonpareil	1	„	„
Do. Large York	1	„	„
Do. Red for Pickling	1	„	„
Cauliflower, Early	2	„	„
Do. Late	2	„	„
Red Beet	1	„	„
Turnip rooted do	1	„	„
Early white Malta Brocoli	1	4	„
White Cape do	1	4	„
Fine white Celery	1	„	„
Do. Red Do	1	„	„
Page's Giant white do	1	„	„
Turnip rooted do	1	„	„
Common Cress	„	8	„
Vegetable Marrow	„	8	„

Vegetable Seeds.	Per ounce. Rs.	As.	P.
Long Prickly Cucumber	„	8	„
London Flag Leek	1	„	„
Paris Cos Lettuce	1	„	„
White Cabbage Lettuce	1	„	„
Brown Dutch do	1	„	„
Malta, or Drumhead do	1	„	„
Mustard	„	8	„
Common Parsley	„	8	„
Fine Curled do	„	8	„
Noll Koll	1	„	„
Spinach, Prickly	„	8	„
Do. Round	„	8	„
Turnip, Red and White	1	„	„
Radishes of Sorts	1	„	„
Tomato, Large	1	„	„
Peas and Beans, 1lb	2	„	„

Flower Seeds.*

A packet containing 40 Sorts	Rs. 5	„	„
Ditto. ditto. 20 Ditto	„ 2	8	„

In the above assortment of Flower Seeds, are contained the following varieties, viz.,

Annuals, Biennials, and Perennials.

Indigenous flower seeds collected in the Deccan and Concan, or produced in the Society s Gardens, most of which are highly prized by European Horticulturists, may be supplied on requisition, at 2 annas a packet of each species. They may be forwarded from the Society's office by the Overland Mail, the parties being charged for freight, packing, &c., which generally amounts to from Rupees 4 to 8.

The Society has always on sale at the Garden the following *:—

1.	A large assortment of Ornamental Shrubs in pots, per dozen		Rs.	5	„ „
2.	Perennial standard and climbing Plants in pots, per dozen		„	6	„ „
3.	French, Egyptian, and China Orange Seedlings		„	10	„ „
4.	Grafted Mangoes	Ditto.	„	24	„ „
5.	Ditto Pumaloes	Ditto.	„	20	„ „
6.	Mocha and Ceylon Coffee Plants	Ditto.	„	10	„ „
7.	Cinnamon Plants	Ditto.	„	28	„ „
8.	Nutmeg Ditto	Ditto.	„	28	„ „

Rooted Cuttings and Young Plants,

May be forwarded in cases to members at any of the outstations; and specimens of rare plants of peculiar interest may be had on application to the Secretary, as he may be able to procure them from the Gardens or from corresponding members.

Town Hall, Bombay, 1st June, 1848. H. J. BARR, Captain, and Secretary to the Society.

* N. B.—Lists of the names of each kind of the above Seeds, Plants, and Shrubs, may be seen on application to the Secretary in the Town Hall, or the Superintendent of the Society's Garden at Sewree.

The Annual Subscription to the Society is Rupees 15, payable in the month of March.

The usual deduction of 25 per cent. will be made from the above-mentioned prices of all articles purchased by subscribers.

PROSPECTUS.

IT is in contemplation, should sufficient aid and encouragement be afforded, to edit a revised Edition of GRAHAM'S CATALOGUE OF BOMBAY PLANTS, under the auspices of, and at the expense of, the Agri-Horticultural Society of Western India, and to be named "A SYNOPSIS OF THE FLORA OF WESTERN INDIA," the orginal Work having been presented to this Society by its amiable and much-lamented Author.

It has been well observed that "the standing objection to Botany has always been, that it is "a pursuit that amuses the fancy, and exercises the memory, without improving the mind or "advancing any real knowledge; and where the Science is carried no further than a mere sys- "tematic classification, the charge is but too true. But the Botanist who is desirous of wiping "off this aspersion, should by no means be content with a list of names: he should study plants "philosophically, should investigate the laws of Vegetation, should examine the powers and vir- "tues of efficacious herbs, promote their cultivation, and graft the Gardener, the Planter, and "the Husbandman, on the Phytologist. Not that system is by any means to be thrown aside. "Without system the field of nature would be a pathless wilderness; but system should be sub- "servient to, not the main object of, our pursuit." (White of Selbourne.)—The foregoing reasons are conclusive as to the adoption of some system of classification, and no question can now exist as to the superiority of the natural method of arrangement over that of the artificial or sexual system; consequently the former is at the present day most generally preferred, whatever effort and labor it may be indispensable to bestow on its attainment. But Linnæus's arrangement is not without its uses and advantages, for the student in Botany may still consider it as Grammatically and Inventorially useful; it being much easier to discover an unknown species, and the Genus to which it appertains, without reference to its natural order, by this method, than by the natural system, this last requiring a more retentive memory, more extended recollection of a greater variety of particular facts, and a capability of ready reference to the Group or Order, than most minds are equal to, who study the Science, not professionally, but as a branch of Natural History, or for amusement. Having premised so much in defence of the arrangement of the proposed work, the necessity for an enlarged and amended Edition may next be considered.

This may be said to arise from the defects and errors of the Catalogue, and from the uncertain identification of many Genera and species it treats of; besides, it enters very sparingly into the Medicinal virtues, and useful qualities, of Asiatic and tropical forms. To remedy as far as practicable these deficiencies, is one of the objects of the revised Edition; another is to add to the Catalogue all such plants of Western India as may have been discovered and identified since 1838, A D., when it was first edited; to give a fuller and more particular account of those used in Medicine and the Arts, and to ascertain the indigenous names and qualities ascribed to them by native practitioners—adding a short description of each Genus and Species, whereby a student or amateur may readily find out any plant he may meet with, or may not have seen before: the whole to be arranged according to the natural system, as improved and digested by Professor LINDLEY, and on the plan of his Synopsis of the British Flora.

That such a Work would prove eminently useful to Medical students as well as to lovers of Botany, and Natural History in general, there can be no question; but the principal consideration is as to the time, labor, and research, necessarily required for its compilation; and as unaided the undersigned would shrink from such a task, it is urgently and respectfully requested of the Corps Bontanique of Western India to favour him with such observations and additions to the genera and species already enumerated in the Catalogue, as their investigations may have enabled them to make, and they may be desirous of making known, together with such observations as may be essential to their elucidation. Grateful acknowledgments of all such contributions will be duly made in the work, and the Compiler will feel encouraged at his humble endeavours being thus patronised and countenanced by the learned and experienced in this walk of Science, without taking into consideration the natural desire for improvement, and the diffusion of knowledge for the benefit of mankind, we all more or less entertain; for who, in this liberal and enlightened age, would abet a miserly hoarding up of useful facts and observations for individual gratification only, rather than miss the opportunity of adding to the stores of knowledge already collected, and of furnishing the means of alleviating the physical miseries and sufferings of mankind? The Education of Native Youth in the various branches of Natural History should not be overlooked, and, as the proposed Work may, in some degree, it is hoped, contribute to so desirable an end, the Compiler humbly trusts he may not have made this appeal in vain The Work it is expected will be published by the Agri-Horticultural Society of Western India, for subsequent sale for the benefit of the Society, and Contributors to the new Edition will be furnished with a copy of the Work gratis, as an acknowledgment of favours conferred. The undersigned will conclude by urgently pressing upon all lovers of the Science the necessity of patronising such a Work, which is likely to prove a useful manual of the Flora of Western India, a permanent record of recent discoveries, and identifications of known plants, and an indispensable requisite to Native students of Botany and Medicine.

Bombay, 14th March, 1848.

J. VAUPELL.